

Rebirth of UK Manufacturing: Volume 2

Creating a World-class Industry

February 2011



RenewableUK is the trade and professional body for the UK wind and marine renewables industries. Formed in 1978, and with 657 corporate members, RenewableUK is the leading renewable energy trade association in the UK. Wind has been the world's fastest-growing renewable energy source for the last seven years, and this trend is expected to continue with falling costs of wind energy and the urgent international need to tackle CO₂ emissions to prevent climate change.

In 2004, RenewableUK expanded its mission to champion wave and tidal energy and use the association's experience to guide these technologies along the same path to commercialisation.

Our primary purpose is to promote the use of wind, wave and tidal power in and around the UK. We act as a central point of information for our membership and as a lobbying group to promote wind energy and marine renewables to government, industry, the media and the public. We research and find solutions to current issues and generally act as the forum for the UK wind, wave and tidal industries, and have an annual turnover in excess of 1 million pounds.

Introduction

The wind industry offers a significant opportunity for the UK to rebuild its manufacturing base. The engineering and manufacturing challenges of the UK's giant Round Three projects are creating opportunities in the UK for both multinational and local companies, with the potential to drive economic and employment growth.

Since RenewableUK highlighted the opportunities for the UK, in the 'Rebirth of UK Manufacturing', presented by the growth of the wind sector in March 2010, the sector has experienced a truly landmark year. The UK reached an installed capacity of 5 gigawatts (GW) from onshore and offshore wind in September, enough to provide power to three million homes, with the commissioning of Fred. Olsen Renewables' 200MW Crystal Rig II wind farm on the Scottish borders and Vattenfall's 300MW Thanet Offshore Wind Farm.

The UK already leads the world in small wind turbine manufacturing, representing 25% of the global market. Currently, over 20 UK-based manufacturers supply 70% of the domestic market and successfully export their products to more than 100 countries worldwide. It is expected that, in line with the increasing demand for small-scale renewables, the financial incentives such as Feed-in Tariffs and the streamlined planning process under way, the domestic manufacturing base will be expanded and strengthened over the coming years.

Crucially for large-scale wind, 2010 saw a significant speeding up of the rate of deployment of wind power. Whilst the UK's first gigawatt took 14 years to deploy between 1991 and 2005, the last took less than 12 months. Whilst onshore wind continues to grow steadily, it is offshore wind that is increasingly becoming the driver for Britain's wind power.

Statistics released by the European Wind Energy Association (EWEA) in January 2011 confirm that the UK is consolidating its position as the world leader in the offshore wind sector, with 1,341 megawatts (MW) installed, or 45% of the EU total of 3GW, compared to 854MW for Denmark, 249MW for the Netherlands and 195MW for Belgium.

Highlights for the UK offshore industry in 2010 included the commissioning of the Robin Rigg and Gunfleet Sands wind farms, as well as Thanet, which Energy and Climate Change Secretary Chris Huhne MP called a "tremendous engineering achievement". Developers such as E.ON and Dong, and turbine manufacturers such as Vestas, have talked of new professionalism in, and industrialisation of, the sector, with record turbine installation and commissioning times, and record highs in availability after start-up.

“The European Wind Energy Association (EWEA)...confirm that the UK is consolidating its position as the world leader in the offshore wind sector.”

In January 2011, power also started flowing into the grid from the Walney and Greater Gabbard projects, which, when completed, will take the UK's offshore capacity to over 2GW.

Policy experts and industry officials have put forward increasingly ambitious estimates of the potential of the offshore resource for the UK economy. In May 2010, a groundbreaking report by the Offshore Valuation Group, a coalition of government and industry organisations, showed that the country's offshore renewable resource matches North Sea oil and gas in equivalent barrels of oil. Using less than a third of the resource, the renewables sector could generate the energy equivalent of 1 billion barrels of oil per year, create 145,000 new jobs and provide the Treasury with £28bn in tax receipts, and allow Britain to become a net exporter of electricity by 2050, whilst reducing carbon emissions by 30% compared to 1990 levels.

According to the middle of three scenarios in a report published by Douglas Westwood and RenewableUK in June 2010, the offshore wind sector could build 7.7GW of capacity by 2015, rising to 23.2GW by the end of 2020, with further growth beyond. This "Healthy Industry" scenario foresees the installation of 10,000 turbines and foundations, 12,000km of array cabling and 8,500km of export cabling. This will require the establishment of the equivalent of 22 factories for just the turbines, foundations and cables, at a cost of around £1bn. Crucially, Douglas Westwood states that the sector will need at least five turbine plants by 2014 in order to meet market demand.

This level of projected growth in the offshore wind sector poses a significant challenge, yet there is every sign that the wind industry is picking up speed in order to meet it. The present year will see 2010's rate of installations maintained, with the highlight being the start of offshore work on the 630MW first phase of the London Array wind farm.

Meanwhile, the developers of the giant Round Three zones are moving forward with their projects, are expanding project teams and have begun to publish ambitious build out programmes.

To name just the largest, the Forewind Consortium (made up of RWE, Scottish and Southern Energy, Statoil and Statkraft) says it will carve up its 9.2GW Dogger Bank zone into four tranches, each made up of three separate wind farms, meaning the Dogger Bank zone will contain 12 individual projects. The three wind farms in the consortium's "Tranche A" will each be significantly larger than the full London Array project, with 1.4GW of capacity each. Forewind has already agreed a grid connection offer from National Grid to link the first wind farm to an existing substation near Cottingham, East Yorkshire.

Iberdrola-owned ScottishPower Renewables and its partner Vattenfall, who are developing the 7.2GW East Anglia zone, plan to divide it into six 1.2GW projects, with the first project due to start construction in 2015 and the last in 2020.

The most significant aspect of the Round Three step change is that the scale of the opportunity has brought large-scale wind turbine producers to the table in order to be close to the biggest offshore wind market in the world. In the previous edition of this report, we wrote:

“The offshore wind sector could build 7.7GW of capacity by 2015, rising to 23.2GW by the end of 2020, with further growth beyond.”



“Companies have realised that the sheer scale of the Round Three projects means that there is room for a number of suppliers in the market...”

“Sadly, however, nothing about [the manufacturing renaissance] is certain...the manufacturers of offshore wind turbines are all based overseas, and whilst many British firms are gearing up to provide components, the UK does not yet have a large-scale turbine manufacturing plant to serve this burgeoning market”.

A year on, the situation has changed significantly. In March 2010, Siemens and GE both announced plans to establish UK turbine factories, to add to already announced plans from Clipper and Mitsubishi to develop prototypes in the UK. Siemens and GE were joined later in the year by Spain’s Gamesa, which announced its intention to set up a UK plant in October.

Companies have realised that the sheer scale of the Round Three projects means that there is room for a number of suppliers in the market, and developers are unlikely to award all their contracts to any single company for risk mitigation reasons. As well as Siemens, GE and Gamesa, other companies are developing offshore turbines, and the likelihood is that one or more of these will come to the UK.



“Local supply chain companies continue to get in on the act, in areas such as the production of monopiles and other subsea structures...”

Siemens has since moved ahead with its plans, announcing in January that it has signed a Memorandum of Understanding with Associated British Ports to develop its £80m facility at Alexandra Dock, Hull, on Humberside. Gamesa has stated the potential for an industrial, logistical and O&M base in Dundee, along with the establishment of an offshore technology centre in Glasgow, plus the construction of a blade manufacturing plant (location still to be decided). Between them, the two companies will create at least a thousand jobs over the next few years.

Local supply chain companies continue to get in on the act, in areas such as the production of monopiles and other subsea structures, wind turbine towers and cables, as well as vessels to support offshore operations. Many others are eyeing up new capacity and pitching their plans to developers and turbine manufacturers.

The UK Government’s decision to maintain a commitment to provide £60m in funding to develop infrastructure for the offshore wind industry in October 2010’s Comprehensive Spending Review was a key moment in removing companies’ doubts about its support for the sector and encouraging companies to move ahead with their plans. The UK Government’s decision was followed in November 2010 by Scotland’s First Minister Alex Salmond’s announcement of £70m for infrastructure development north of the border, at the RenewableUK conference in Glasgow.

The intellectual infrastructure, such as R&D facilities and testing sites, is an important part of the package to make the UK an attractive place for manufacturers to locate.

All of turbine suppliers' UK manufacturing plans are based on building brand new turbines, such as Siemens' 6MW direct-drive machine or Gamesa's 5MW and 6–7MW designs, so the UK's R&D capability and testing facilities are a key issue for the industry. Investment in innovation is also important to bring down the cost of offshore wind.

An asset the UK already has is the National Renewable Energy Centre (NaREC), which is investing in drivetrain and blade testing facilities, as well as offshore wind test sites.

In August, The Crown Estate announced the creation of four demonstration sites – two in England and two in Scotland – for the testing of new offshore wind turbines. Turbines that could be tested at the sites include Clipper's Britannia prototype and Siemens' new direct-drive machines. But more sites are likely to be needed, given the level of interest from the many potential new market entrants.

Meanwhile, the UK is already seeing the employment benefit of R&D activities for offshore wind, with Vestas putting the finishing touches to a state-of-the-art blade technology and testing centre on the Isle of Wight. Mitsubishi Power Systems Europe (MPSE) is establishing the MPSE Centre for Advanced Technology (MCAT) in the Edinburgh area and has acquired Edinburgh University spin-off Artemis Intelligent Power (AIP). It has a strategic partnership with developer Scottish and Southern Energy (SSE), and expects to create around 200 jobs by 2015.

There is no room for complacency, however. The Government's consultation on Electricity Market Reform (EMR), launched in December 2010, needs to be concluded swiftly for the industry to maintain its momentum. The proposals are being closely studied by the industry, which is looking to bring forward constructive proposals that translate the Government's framework into workable mechanisms. Whatever the outcome, the Government must work hard to ensure that any transition to a new system is carried out with the minimum of disruption. The EMR package – which also includes a carbon floor price, an emissions performance standard and a capacity mechanism – is a complex set of reforms and the Government has only one chance to get it right, otherwise there is a real danger of a hiatus in wind investments.

And onshore wind faces additional risks as continued bottlenecks in the planning system are threatening to once again thwart the sector's potential. A report published by RenewableUK in November showed that across the whole of the UK, approval rates for onshore wind farms have fallen from 76% to 44%. This has been particularly pronounced in England, although even in wind-friendly Scotland, the approval rate has fallen to 56% from 77%. The Government's Localism Bill, if it is not carefully thought through and implemented in consultation with the wind industry, could make things more difficult still. In such an uncertain environment for development, creating jobs in the supply chain will be more difficult.

For the offshore sector, a major problem in the coming years will be financing the UK's ramp up after 2015. Utilities are likely to reach the limits of what they can finance on their balance sheets as the big projects begin, whilst banks and institutional investors are still getting comfortable with the construction and technology risks of an immature sector that only offers moderate rates of return.

“The UK is already seeing the employment benefit of R&D activities for offshore wind...”

The October announcement that the Government will go ahead with the establishment of a Green Investment Bank (GIB) was warmly welcomed by the sector, but plans for an initial £1bn with possible increases to be financed by government asset sales appear insufficient for the task. Whilst much could be achieved by using the bank to develop products that will help “de-risk” private sector investment, it seems highly likely that major new initiatives to help channel investment into the sector will be needed, along with large-scale involvement from multilateral institutions such as the European Investment Bank.

The period between now and 2015 will be critical in terms of ensuring that sufficient capacity can be brought online to meet the massive upsurge in demand that will occur in the years following. Delays in creating the necessary supply chain capacity will have a knock-on effect on project schedules and could create major upward pressure on costs.

Significant challenges lie ahead, but the good news is that there is every sign that industry and policy makers are prepared to meet them. Every successful project such as Thanet or Robin Rigg adds to the experience and skills retained in the industry, and allows investors to feel more confident and willing to commit earlier to offshore wind projects. The construction of the London Array in 2011 will be a visible and iconic symbol of the central role that offshore wind is set to play in our society.

In 2010, the UK passed a key juncture, with announcements from manufacturers showing that the lion’s share of turbines for the Round Three projects can be built in Britain, and that the industry can create significant amounts of manufacturing jobs in the process. Supply chain companies based in the UK have not been slow off the mark, with more and more firms starting to grasp the opportunities that lie ahead of them.

The eight case studies in the report will show that the rebirth of UK manufacturing is on course and picking up speed.

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Siemens

Siemens aims to become one of the world's top three providers of wind turbines globally in the next three years. In the UK, Siemens is the leading provider of offshore wind turbine technology and grid connections. Over 40% of the UK's total onshore and offshore generating capacity (over 2GW) is generated by Siemens technology.

“The decision to invest in a new UK-based nacelle-manufacturing factory...was a logical next step in its investment programme, and an important part of its global strategy to get closer to its key markets.”

The UK is the world's largest offshore wind power market. Siemens is already investing heavily in renewable energy in the UK and plays a key role in The Crown Estate's offshore programme. In addition to its role in Round One and Two projects (part of The Crown Estate's programme), the company has a 50% equity stake in the Round Three Hornsea offshore wind development zone. Siemens also has a 10% equity stake, as part of a joint venture, in Gwynt y Môr and 25% in the Lincs wind farm development, both of which are already under construction.

For Siemens, therefore, the decision to invest in a new UK-based nacelle-manufacturing factory (announced initially in March 2010) was a logical next step in its investment programme, and an important part of its global strategy to get closer to its key markets.

In October 2010, following the confirmation of funding for port site land development in the Chancellor of the Exchequer's Comprehensive Spending Review, Andreas J. Goss, Chief Executive of Siemens UK & Cluster North West Europe, said, "I warmly welcome the UK Government's continued support for the renewable energy sector. The funding to ensure appropriate port infrastructure is an important factor enabling us to accelerate progress with our £80 million investment in a new wind turbine factory, creating around 700 new UK jobs and many more in the supply chain."

In January 2011, Siemens announced the signing of a Memorandum of Understanding with Associated British Ports (ABP) to develop Green Port, Hull, as a potential site for its UK manufacturing facility. Development of the new factory is planned to meet the operational requirements of Round Three by 2014.

Siemens is also a major investor in wind power R&D in the UK, with centres of competence in Keele, Sheffield and Manchester, as well as investing heavily in skills and training. Siemens has invested over £3m in a wind power training facility in Newcastle (part of an overall £8m investment in the Integrated Energy Service Training Centre) and recently helped launch a new wind power technician apprenticeship programme with RenewableUK. Siemens hopes to create an additional 200 jobs in its North West Europe grid connection competence centre based in Manchester in the next few years. Overall, Siemens expects to double its workforce in renewables in the UK by 2013.

General Electric

General Electric (GE) is planning to manufacture its next generation 4MW offshore wind turbines in the UK and create nearly 2,000 jobs by 2020, in a move that places the UK at the heart of its European offshore wind growth strategy.

“The UK has a unique opportunity to become a global centre of excellence in the offshore wind sector...”

Like Siemens, GE reaffirmed its intention to invest £100m in the UK’s nascent offshore wind sector after the Government retained the £60m port upgrade fund in last October’s Spending Review.

GE plans to develop offshore wind turbine manufacturing facilities and locate design, application and service engineering resources in the UK, in a move that could create up to 1,900 direct and indirect clean energy jobs in the UK by 2020.

However, its investment and the location of its new facilities still depend on the precise deployment of the £60m port funding.

Mark Elborne, Chief Executive and President of GE UK, says that the UK has a unique opportunity to become a global centre of excellence in the offshore wind sector, but he insists that the availability of suitable ports is crucial to its success.

“Government funding and the development of a suitable port infrastructure are critical if we are to locate our offshore wind manufacturing operations here in the UK”, he says. “We believe offshore wind offers the UK a significant opportunity to create jobs for UK employees and to contribute to future economic growth, in what will be a highly competitive global marketplace.”

GE’s UK plans form part of the company’s larger European offshore wind expansion, which will also see a €105m investment in Germany, a €50m investment in Sweden and a €75m investment in Norway.

Tata Steel

Tata Steel Europe (formerly Corus) wants to invest £31.5m to build a factory in Teesside, in order to manufacture steel foundations for offshore wind turbines. However, its investment depends on the company being able to secure enough orders from offshore wind farm developers.

“The firm is keen to help the UK establish a robust supply chain to serve what will be a rapidly growing market for UK-based manufacturers.”

Tata Steel has a long-established record in the energy sector for supplying steel to pipelines and offshore oil and gas rigs and power stations, and it now wants to use this experience to take advantage of the emerging renewables sector.

The company said last year that it is investigating the option of developing a new facility to produce foundation structures for offshore wind turbines, known as monopiles, in Teesside, potentially creating 220 jobs.

It also announced last year that it was investing £8m at its Motherwell plant, to boost production of heavy levelled plate, which can be used to make monopiles, and opened a £1.3m wind tower hub at its Scunthorpe steelworks to process and distribute steel plate to turbine manufacturers.

A Tata Steel spokesman says the firm is keen to help the UK establish a robust supply chain to serve what will be a rapidly growing market for UK-based manufacturers.

“Investments we’ve made to date are helping us keep pace with the fast-maturing renewable energy sector”, he says. “They are also investments in the UK wind energy supply base that will be needed if the UK is to realise its ambitious plans to build thousands of wind turbines over the next ten years.”

Gamesa

Spanish wind turbine manufacturer Gamesa has this year unveiled a wide-ranging strategy that will see it invest up to €150m in the UK's offshore wind industry by 2014, in a bid to capitalise on demand created by Round Three projects in the North Sea.

“Gamesa predicts its offshore industrial plan could create more than 1,000 jobs in the UK, with another 800 jobs created indirectly at local supplier firms.”

Gamesa recently announced plans to base its offshore wind headquarters in London, build a new technology centre in Glasgow and investigate the possibility of developing an industrial, logistics, and operations and maintenance site in the port of Dundee.

Additionally, it is in the process of selecting a location for a wind turbine blade manufacturing facility in the UK and engaging in offshore logistics from a number of UK ports, around which it will locate its wind turbine O&M operations.

In all, Gamesa predicts its offshore industrial plan could create more than 1,000 jobs in the UK, with another 800 jobs created indirectly at local supplier firms.

Gamesa's Offshore Managing Director José Luis Blanco says that the UK Government has paved the way for investment by seizing on its offshore wind potential: “The United Kingdom's resolute decision to enact an ambitious offshore plan, along with the country's support for foreign investment and the availability of large ports – which are essential in this business – convinced us to make the decision to base the global headquarters of our offshore activity in the UK.”

Gamesa is currently designing and developing a new 5MW wind turbine, which is expected to come to market as a pre-series model by 2013. It is also designing a larger 6–7MW turbine to meet predicted growth in demand in the medium to long term, which could come to market by 2014.

BGB Innovation

BGB started supplying the wind sector with bespoke slip ring and brush holder assemblies for rotary applications in 1994, and the transformation of the company in recent years has gone hand-in-hand with the development of the burgeoning industry.

“Despite the recession in 2009, the company made a conscious decision to invest, swelling the workforce to 100 people...”

Despite the recession in 2009, the company made a conscious decision to invest, swelling the workforce to 100 people and spending over £1m on upgrading buildings and plant.

Although growth has not yet returned to the 30% mark enjoyed pre-recession, David Holt, BGB’s Marketing and IT Director, is convinced the company is now in a better position to capitalise on a growing wind energy market.

“Our in-depth knowledge and experience of the market was the foundation of the investment decision”, he says. “BGB designs and manufactures its own tooling, produces its own prototypes and then follows the process through to production.” Holt adds that whilst the European market remains a priority, the company also exports to the US, China and India, and is in discussions to build a facility in the States by the end of 2011.

“The situation for supply into Europe remains positive for many years to come – the industry continues to show signs of development”, says Holt. “The challenge will be transferring our UK experience and knowledge to serve the local markets.”

MTL Group

A supplier of boat-landing systems, nacelle bedplates and transition decks to foundation structure manufacturers, MTL Group is a prime example of how the economic benefits from offshore wind farms can filter down the supply chain.

“MTL...now has a large and growing wind division, bolstered by a £5m investment in new premises, that doubled its manufacturing space...”

It was only a year ago that MTL began to focus on wind energy in earnest, but it now has a large and growing wind division, bolstered by a £5m investment in new premises that doubled its manufacturing space, delivered industry-specific machinery and funded an intense programme of staff training.

A £250,000 government grant also supported its redevelopment of a quayside site at the Port of Blyth, one of the areas tipped to become a major hub servicing North Sea wind farms.

“We see this as a big opportunity and have laid all the foundations to capitalise on the growth”, says Managing Director Dr Henry Shirman. “We’ve got the facilities, the space, the people and the drive to do it.”

Dr Shirman considers MTL to be ahead of the game when it comes to supporting the offshore wind opportunity as it develops: “The support MTL Group has received from government, together with the weak pound, has helped us to be more competitive both in the UK and within Europe.”

Gaia-Wind

Gaia-Wind's move to new offices at the beginning of 2011 is a reflection of the originally-Danish firm's confidence in the UK small wind market, as well as the potential of the country to emerge as an export hub.

“Feed-in Tariff incentives have been a driving force behind demand from farmers and large estate owners...”

Now firmly embedded as a Scottish company, from its new base in Glasgow, Gaia-Wind will handle the assembly, testing and distribution of over 250 small wind turbines this year and expects annual production to rise to around 2,000 units over the next few years, creating more than 50 new jobs.

Feed-in Tariff incentives have been a driving force behind demand from farmers and large estate owners for its turbine, which was one of the first turbines to achieve full MCS certification and therefore be eligible.

“Gaia-Wind's commitment to quality right through the business is supported by Feed-in Tariffs, making investment for the purchaser very much more attractive and enabling a repayment time of around five to six years”, says Managing Director Johnnie Andringa.

With almost 300 of Gaia-Wind's turbines already installed across the UK, Europe and the US, the company now hopes its new facility will act as a springboard in its bid to capture more overseas sales.

“A growing proportion of products assembled will be for export to overseas markets; in 2009 more than 60% of the products were for customers outside Scotland, but in 2012 this will have grown to 80%, of which more than 40% will be exported outside the UK”, Andringa says.

David Brown

Wind turbines always seemed a natural fit for a company with 150 years of experience making reliable gears for systems for which the costs and consequences of mechanical failure can be unthinkable.

“David Brown was sought out by Clipper to build a gearbox for the 10MW turbines that it hopes will power the UK’s giant Round Three wind farms.”

Consequently, two years after adding wind turbine technology to its portfolio of systems for the defence, rail, oil and gas, and numerous other industries, David Brown was sought out by Clipper to build a gearbox for the 10MW turbines that it hopes will power the UK’s giant Round Three wind farms.

The company has also supplied Vestas North Europe with wind turbine gearbox upgrades, is currently developing a new gearbox for a 6–7MW range of turbines and is fast emerging as one of the leading players in the burgeoning market for wind turbine components.

Ian Farquhar, Managing Director of David Brown’s wind energy business, is happy to admit the “significant strategic investment” the company is making in two new facilities in the Huddersfield area is a direct result of its success in adapting its core operations to incorporate offshore wind products.

One of the new facilities will continue to produce gears for OEM wind manufacturers, whilst the other will house the company’s growing operations and maintenance business – David Brown Windserve.

Offering a global service ranging from inspections and upgrades to refurbishment and maintenance, Farquhar predicts that David Brown Windserve will continue to achieve major growth for the foreseeable future.

“The market for O&M for gearboxes is ballooning”, he says. “We see it being worth billions, based on the installations already in place.”

UPDATE on Rebirth: Volume 1

As well as the new entrants stepping up investment in the UK's wind energy industry, those early movers who announced plans to build new manufacturing capacity several years ago are beginning to see the fruits of their labour.



Tees Alliance Group

Engineering firm TAG Energy Solutions' evolution from a provider of North Sea oil and gas platforms into a developer of foundation technologies for offshore wind turbines has continued apace over the last 12 months, with the company expected to open a new manufacturing plant at its Teesside headquarters by the summer.

Stuart Dawson, Construction Director at the firm, says the company has already started recruiting for the new plant, which is scheduled to be commissioned in May and will ultimately employ up to 120 people when operating at full capacity, as well as a further 200 to 300 working on related outside assembly work.

The project was financed with a £1.5m grant from the Department of Energy and Climate Change (DECC), a further £1.5m from the One North East Regional Development Agency and an undisclosed sum raised through a private financing round.

Dawson says the company's focus is now on securing its first contract, with talks underway with a number of offshore wind farm developers. "We are fairly bullish about our prospects, but

we won't be celebrating until we have the first contract", he says. "The interest is there and we are targeting a number of Round Two and Round 2.5 projects, whilst also talking to potential clients about Round Three. We would like to have the first contract announced before completion of the facility."

However, he admits that despite TAG ES' investment in building a UK supply chain for the industry, the sector remains highly competitive.

"The fear is still there that the UK could miss out", he says. "We are competing with companies from Europe and Asia, and pricing is very aggressive. When Round Three starts there will be enough work for everyone, but at the moment that is still several years away, and we will need to be highly competitive to win business."

JDR Cables

As one of the first engineering firms to recognise the potential for developing products and services for the offshore renewable energy industry, alongside its traditional strength as a provider of infrastructure to the global oil and gas sector, JDR Cables is well positioned to take advantage of the UK's expanding

offshore wind industry, but is frustrated by the slow pace at which new wind farms are being approved and developed.

Over the past few years the cabling specialist has emerged as one of a handful of British firms to benefit from the UK's first wave of offshore wind farms, securing contracts to provide transmission cables to the London Array and Greater Gabbard wind farms. It also opened a second factory in Hartlepool in 2009, and last year secured a £2m grant from the Department of Energy and Climate Change to help it deploy specialist equipment at the facility, which will allow the firm to produce new high-voltage cables for the giant Round Three offshore wind farms.

Speaking at the time of the funding award, Managing Director Patrick Phelan said, "High-voltage export cables are a bottleneck in the supply chain for offshore wind farms, and we are delighted that, as a result of this investment, we will have the capability to manufacture this vital connection right here in the UK."

Mabey Bridge

Just over a year on from the announcement that it was to build a £38m wind turbine tower manufacturing plant, engineering firm Mabey Bridge is poised to open the doors of the new factory near Chepstow.

Alex Smale, UK Director at Mabey Bridge, says the company has finished most of the construction work and has begun installing manufacturing equipment.

“We are about a month from finishing the development, which will give us capacity to make up to 200 towers, and there’s potential for further development on the site to increase capacity further”, he explains.

Production work has already begun at the site and the company will start delivering towers in early April as part of its framework agreement with wind turbine firm REpower.

“We have about 60 people employed at the new plant and recruitment is on-going”, says Smale. “At full capacity we could employ upwards of 200 people at the tower factory.”

The company is currently in talks with a number of other wind turbine manufacturers and is confident that the successful manufacture of the first towers at the plant will allow it to demonstrate the effectiveness of its new facility to other potential clients.

However, Smale admits that the market remains highly competitive, with a number of manufacturing plants in northern Europe experiencing overcapacity – a scenario he argues the Government could address by resolving the on-going planning and financing challenges faced by many UK wind farm developers.

Other developments

US engineering giant United Technologies Corporation (UTC) completed its acquisition of wind turbine manufacturer Clipper Windpower for \$112m late last year. Clipper’s Britannia project team is continuing to develop plans for a 10MW offshore prototype wind turbine.

Boat manufacturer Alnmaritec continues its push into the growing market for offshore wind farm support vessels and in August launched Endurance, the 100th vessel built by the company. The 18-metre aluminium asymmetric catamaran was delivered to operators North Sea Logistics, making it the fifth in a series of sister vessels built for the company to support operations on offshore wind farms.

North Sea oil and gas engineering firm Burntisland Fabrications (BiFab) similarly continues its push into the wind turbine foundations market after Scottish and Southern Energy (SSE) acquired a 15% share in the Fife-based company. The firm also announced recently the signing of a Memorandum of Understanding with SSE, engineering firms Siemens and Atkins, and subsea construction company Subsea 7, which will see the group work on a new research project designed to substantially reduce the cost of delivering power from its offshore wind farms.

Power conversion specialist Converteam and SSE have entered into an agreement to jointly develop innovative fully direct current technologies to reduce the cost of ownership of offshore wind power generation and distribution. With support from the UK Government’s Environmental Transformation Fund, a Permanent Magnet Generator version of Converteam’s proprietary Active

“Just over a year on from the announcement that it was to build a £38m wind turbine tower manufacturing plant, engineering firm Mabey Bridge is poised to open the doors of the new factory near Chepstow.”

Stator generator technology will be created to form a full-scale test facility. Once proven, the technology will be manufactured at Converteam factories in Scotland and England, providing up to an additional 200 skilled jobs.

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