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Message of Greeting Dr Philipp Rösler



German Minister of Economics and Technology



The expansion of offshore wind power plays a key role in the implementation of Germany's energy reforms. These maritime projects are generating major opportunities for German firms: both for innovative industrial companies in the machinery and plant construction sector, and

for shipyards and component suppliers. New commercial prospects are emerging for many coastal regions of the North Sea and the Baltic. In many cases, the companies building the offshore wind farms are breaking new ground. The work is truly pioneering – often taking place at great depths and large distances from the coast. The companies involved have to cope not only with technological problems but also with complex financing and liability issues.

We are aware of the challenges, and are helping the stakeholders to develop appropriate solutions. For example, we have provided €5 billion via the KfW's special "Offshore Wind Energy" programme to facilitate the funding of the required large-scale investments. In the 2012 revision of the Renewable Energy Sources Act, we have also introduced the "compression" model, which provides higher tariffs for the electricity fed in in the early stages to improve the refinancing of the investments.

Grid connection is another key issue. Our Grid Expansion Acceleration Act has already significantly improved the policy environment for the building of new powerlines. And further progress is already being made: A few days ago, the transmission system operators presented the first draft of the nation-wide grid development plan. Following completion of the current consultation procedure, in which every member of the public may voice their views, this draft shall form the basis for the future expansion of the grid. The Federal Maritime and Hydrographic

Agency will also produce an offshore grid expansion plan by the end of the year. This latter plan, which will serve to better co-ordinate the expansion of the grids with that of the wind farms, will not only make a major contribution to the faster connection of the turbines, but will also lead to greater cost efficiency.

The improvement of the policy framework for offshore projects is a topic that is also under intense discussion within the Economics Ministry's Platform for Future-oriented Power Grids. One of the key issues currently being addressed concerns the undertaking of liability for interruptions to supply and delays in the connection of offshore wind farms to the grid, including who will bear the relevant costs. We plan to deal with this issue quickly, and in a way which ensures a fair balance between all of the parties. Solutions in which the burden is borne solely by the consumers are not an option. The transmission system operators and the wind farm operators must bear an appropriate part of the risk themselves. The resolution of these issues of liability will have a positive impact on the financing of the investment in the offshore facilities.

We need close dialogue and good co-ordination to make the expansion of our offshore wind power capacities quicker and more efficient. The 2012 Windforce Conference will play an important role in achieving this. I would like to take this opportunity to wish all participants valuable new ideas, fruitful discussions and a very successful conference and trade fair.

Dr Philipp Rösler German Minister of Economics and Technology

Words of welcome from the Organisers





Ronny Meyer, WAB e.V. and Jens Eckhoff, Offshore Wind Messe- und Veranstaltungs GmbH





Dear WINDFORCE Participants,

We are very pleased to welcome you this year to Germany's first trade fair devoted to offshore wind energy and to the eighth annual WAB offshore conference – held for the first time in the Hanseatic City of Bremen.

What began seven years ago with just under 200 participants has grown into an industry event that has no equal. The development of WINDFORCE completely reflects the development of offshore wind energy in Germany. At the first WAB offshore conference in 2005, we were still looking ahead to the future. Today we find ourselves right in the middle of it, and there is still a lot of work ahead of us.

The development of German offshore wind energy is something to be proud of: Alpha Ventus has a capacity utilisation of 4,500 to 4,600 full load hours – unique in the world in this form. The fourth of the commercial wind farms constructed off Germany's North Sea and Baltic coasts has now been installed. A total of 200 megawatts of power currently comes from German offshore wind farms.

But there is still much to do and several hurdles to clear. Offshore wind energy is the key element in seeing through the energy turnaround in Germany. Chancellor Angela Merkel recently declared offshore wind energy a top priority.

With that, the federal government has signalled how important the successful grid connection of offshore turbines is – an essential building block!

The industry is ready to go. Now the right conditions must be put in place so that the German government's goal to generate 10,000 megawatts of power offshore in the next ten years can be achieved.

Over the next four days, WINDFORCE will focus on the issue of grid connection and other relevant topics, and facilitate the exchange of information so vital to the sector. International collaboration and cooperation are the lifeblood of our industry. Therefore we are pleased that WINDFORCE, although taking place in Germany's northwest, the region specialising in offshore wind energy, is the trade fair and conference where we can exchange ideas and network with each other at the international level.

More than 250 exhibitors at WINDFORCE will represent the entire value-added chain of the industry, and nearly 50 lectures and presentations by experts in the field will bring listeners up-to-date on the issues challenging the sector today. There is a lot to talk about!

We are looking forward to enjoying four productive, informative, cooperative and inspiring days together with you at this event.

Ronny Meyer WAB e.V. Jens Eckhoff Offshore Wind Messe- und Veranstaltungs GmbH

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Words of welcome by Reinhard Bahrke



Commercial Vice President Central Europe, Alstom Grid



Alstom Grid is proud to be one of the major sponsors of the WINDFORCE 12 – DIRECTION OFFSHORE Conference. We believe that the future will be a bright one for offshore wind energy. The market is growing, as together we recognise a qlobal need for sustainable

energy solutions. But, at the same time, we are facing huge challenges to realize the German and European energy visions.

At Alstom, one of our key priorities is the integration of more renewable energy sources into the grids. We are not only a world leader in wind farm connections and 'smart' wind power management but we are also pioneering the way in offshore wind farm connections. The potential of wind energy, particularly from offshore sources, is vast. In the North Sea alone, the offshore wind potential is set to reach 2,600 TWh by 2020, which is the equivalent of 60% to 70% of the projected electricity demand for Europe. Alstom Grid has installed or is currently constructing offshore wind farm connections, which bring a total of over three Giga Watts of electrical energy to onshore electricity networks. In fact, we designed and constructed the first offshore substations in the UK as well as in the Germany.

Harvesting the energy potential of wind in severe and unstable ocean conditions comes with great challenges. The further a wind farm is located from the shore, the more important it is to have a reliable grid connection. At Alstom Grid, we are responding to these challenges with innovation, having developed the HVDC MaxSine, a Voltage Source Converter (VSC) solution that enables the most efficient DC transmission of offshore wind power to the onshore grid. Furthermore, we found a way to reduce the installation risk linked to offshore connections by developing floating and self-installing offshore substations to connect the wind farms to the network.

Alstom Grid offers wind farm solutions that comply with international and customer-specific standards.

We differentiate ourselves through our expert knowledge in feasibility studies, power connection design and power quality solutions such as STATCOM and SVC. Our range of solutions encompasses HV products as well as offshore platform solutions for HVDC and HVAC. For onshore wind farms, Alstom Grid delivers turnkey MV/HV substations for switching, controlling and managing transmission systems.

What's more, Alstom's offer extends along the energy chain. Our brand new Haliade™ 150 – 6 MW offshore wind turbine provides our customers with a complete wind farm solution. The turbine is equipped with a direct drive permanent magnet generator and a 150 m-rotor diameter. Adapted to the harsh environmental conditions offshore it has a robust, simple and efficient design; making the Haliade™ 150 – 6 MW the most advanced offshore turbine of its kind.

With over a century of experience in power transmission and generation, Alstom's products and solutions are world-renowned. Recently, Alstom was selected to supply 240 wind turbines for the French tender to the consortium led by EdF Energies Nouvelles, based on our detailed technical and environmental studies, competitive bid, and - importantly - our ambitious industrial plan to create an industry able to supply the French and European energy markets.

The contract of the projects is worth approximately € 2 billion. Four new Alstom factories will be built to support this growth, in Saint-Nazaire and Cherbourg in France, creating 5,000 jobs (1,000 direct and 4,000 indirect), and helping to establish a French offshore industry which follows the successful German model.

From wind power generation to grid connections, Alstom has all in hand to meet the wind energy challenges of the future and we are fully committed to supporting the WINDFORCE 12 – DIRECTION OFFSHORE Conference. I wish all of us a very pleasant and productive event, with fruitful discussions, conclusive presentations and interesting new contacts.

Reinhard Bahrke

Commercial Vice President Central Europe, Alstom Grid

Words of welcome from Rudolf Stahl



Chairman, Norddeutsche Seekabelwerke GmbH



Heading upwind with strong solutions

Energy turnaround is the buzzword. It's like driving a car. When you've changed direction to target a new destination, at some point you have to put the car in gear and accelerate. Otherwise the much-vaunted

goal will remain a far-off dream. But when you look at the present situation, it's hard not to feel that all too many players have taken their foot off the accelerator, even though the thrust for an era of regenerative energies is supported by an enormously wide social consensus. Everyone is called upon to make proactive use of this huge opportunity. Here and now.

In the field of offshore wind energy, many companies have already been setting a good example. They have made crucial investments, and in some case entering into long-term agreements, such as chartering contracts for ships. Thus with all the potential opportunities involved, the companies concerned have also accepted definite risks. And now we are seeing delays that are not solely attributable to problems with the component suppliers. Frequently, the crucial issue involved is the availability of funding, or tender conditions that are not precisely conducive to diversity in the supply chain.

Let us not forget: offshore wind is still an industry in which pioneering work is vital. Companies and investors are running major risks. It's important to ensure that these risks are divided fairly between companies, investors and society as a whole. After all, it is precisely society as a whole that will reap sustainable benefits from the expansion of wind energy utilization, not least by the creation of numerous new jobs. This is where the politicians come in. Expansion of the grids now requires the right fundamental decisions to be taken for assuring appropriate financing in both the short and the long-term. How do other people approach this? It's worthwhile taking a look beyond Germany's borders, to France and the UK, for instance, and checking whether our own structural framework conditions are the right ones.

Companies need reliable framework conditions. This is essential if they are to continue providing valuable resources for research, development and production lines. And society needs successful implementation of the energy turnaround. Offshore wind energy is a crucial building block for assuring the supply of dependable and affordable energy on a lasting basis.

Rudolf Stahl Chairman Norddeutsche Seekabelwerke GmbH

Norddeutsche Seekabelwerke GmbH (NSW) has since 2007 been a wholly owned subsidiary of General Cable Corporation.

www.windforce2012.com

Industry expertise – the Executive Board



WAB's Executive Board of elected members provides advice and defines the association's strategic orientation. Since 2011 is Dr Klaus Meier WAB's chairman. He is supported by nine board members who are active in the wind energy industry.

Chairman of the Executive Board

Vice-Chairman of the Executive Board



Dr Klaus Meier wpd AG



Norbert Giese REpower Systems SE

Other Executive Board members



Gerhard Gerdes Deutsche WindGuard GmbH



Thomas Haukje NW Assekuranzmakler GmbH & Co. KG



Jean Huby AREVA Wind GmbH



Dirk Kassen WeserWind GmbH Offshore Construction Georgsmarienhütte



Dr Helmut Klug GL Garrad Hassan Deutschland GmbH



Detlef Lindenau REETEC GmbH



Nils Schnorrenberger Managing Director of the Bremerhaven Association for Investment and Urban Development mbH (BIS)



Thorsten Schwarz NSW Norddeutsche Seekabelwerke GmbH



WAB – the network for wind energy



The WAB Wind Energy Agency is the leading business network for the wind energy industry in Germany's northwest region and is the national point of contact for the offshore wind energy sector in Germany. The association counts more than 350 businesses and institutes among its members, who are active in all areas of the wind energy and maritime industries and in research.

WAB's goals are to bring its members together and strengthen the network, to expand wind energy at sea and on land, to develop the offshore wind industry in Germany, and to advance repowering in the northwest region.

WAB assists its members in finding the right business partners and offers a variety of services and activities with this in mind.

WAB is present at international trade fairs, holds expert seminars, commissions studies, conducts market analyses, carries out extensive lobby and public relations work, initiates and sees through research and educational projects, and sponsors study trips.

WAB each year organises Germany's largest international offshore conference and trade fair, the WINDFORCE event. It also regularly hosts network get-togethers and receptions for international delegations, and arranges tours of production facilities. WAB also takes up the political challenges facing the wind energy industry, supporting activities that bring forward public debate on relevant issues at local, state and national levels of policy-making.



WAB financially supported by the German State of Bremen.







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Interview with Dr Cederick Allwardt of Alstom Grid:

"HVDC technology is technically mature. This year Alstoms Centre of Excellence celebrates its 50 years of commitment to HVDC solutions."



Dr Cederick Allwardt, Alstom Grid

○ Alstom is once again the major sponsor of the WINDFORCE conference. Why?

We believe there is great growth potential in the offshore wind energy industry because the success of the energy turnaround significantly depends on the successful expansion of offshore wind energy. In the present situation, Alstom can be seen as an official supplier of the energy turnaround. Our leading position in AC offshore substations for offshore wind farms is clear evidence of this.

WAB's WINDFORCE conference gives us the opportunity to acquire an overview of the market and gather information on current trends in the offshore wind energy sector. An added advantage is that we can meet with many of our clients, partners and suppliers. At the WIND-FORCE conference we have few wastages.

▶ There is currently no assurance regarding the grid connection of planned offshore wind farms in the German Bight after 2015 – a problem for investors and subcontractors, and for future energy policies, too. Does this depend on technology? What is your opinion?

There is no single answer to this question. Instead we must look at the overall situation with all its different aspects and elements. The transmission grid operator TenneT is forced to accept unlimited liability risk, for which there is currently no comprehensive insurance available on the market. This is a legal and commercial problem. As far as the technology is concerned, we focus on the challenges we must overcome and which – we believe – can be overcome. The main problem is that the time frame for the DC connection of offshore wind farms to the onshore grid, as stipulated by the German government, is technically not feasible.

So are there problems with HVDC (highvoltage direct-current) transmission systems or not?

HVDC technology is technically mature. This year Alstoms Centre of Excellence celebrated its 50 years of commitment to HVDC solutions. We are now focusing on HVDC VSC (voltage source converter), which is in fact a new generation of HVDC technology. With VSC technology, used in offshore substations, we are facing two main challenges. First, we have large and complex projects that are scheduled to be realized in a relatively short time. Second, this technology is to be implemented offshore. For the electrotechnology industry, offshore projects are unchartered territory. Strong winds and waves in combination with salty air make the North Sea one of the roughest environments imaginable for using sensitive HVDC technology.

Does this mean that it might be premature to use VSC technology in the North Sea? Preparations are currently underway in the German Bight for several offshore wind farms that rely on this technology.

All parties involved are facing serious challenges. Furthermore the infrastructure necessary to realize this type of projects needs to be developped. A start has to be made one day. Thanks to VSC technology a new market is tapped.



It must be clear to everyone that this cannot be done overnight. With every project, Alstom and all other parties involved, gather new experience that is important to optimize processes and supply chains on a medium and long-term perspective.

What do you think of the proposals for the further development of offshore wind operations made at the end of March by the Working Group for Acceleration, commissioned by Germany's ministries for economics and the environment? Do these proposals have the right ideas that would effectively accelerate the connection of offshore wind farms to the grid?

Besides manufacturers of HVDC systems and others, the Working Group for Acceleration ("AG Beschleunigung") also included wind farm investors, who are affected directly by the delays. As an Alstom Grid representative, I was a member of the working group myself. Besides several other solutions proposed, it was commonly agreed, that the 30-month time frame which Germany's Federal Grid Agency has stipulated so far for completing offshore grid connections, from the time of commissioning to initial operation, is – as of today – not feasable. A period of 45 to 50 months is a much more realistic target.

The solutions compiled by the Working Group for Acceleration are mainly meant to help push forward the energy turnaround. In this context it is more important to create the conditions needed to realize an offshore wind farm and its connection to the onshore grid than to decide whether the long-term target construction time remains 30 months. I believe it will be possible to accelerate grid connection schemes as soon as we have more experience and the logistics needed for constructing, operating and maintaining offshore wind farms and substations are not a bottle neck any more.

Does this mean that, for now, nothing will change?

Not at all. Offshore wind energy is a new frontier for all those involved - politicians, utilities, banks, grid operators, the wind energy industry and suppliers. The Working Group for Acceleration put together a comprehensive working package. It is now to the politicians to implement the results into legislation and the so called grid development plan ("Netzentwicklungsplan"), realising planing reliability. That includes to redefine the previously mentioned liability risk, a task which is planned for this year by the politicians. It is important that the Working Group for Acceleration continues to exist because offshore wind energy can only be successful if we all work together and exchange our experiences, as is done at the WAB Conference.

○ Would it be conceivable in the future for Alstom to operate offshore grids in a joint venture with TenneT?

As mentioned earlier, we tend to see ourselves as an official supplier of the energy turnaround and not as a power provider. Whether one day Alstom will co-finance and operate a grid for offshore wind farms needs to be considered case-by-case.

How do you envision the ideal offshore substation for connecting offshore wind farms to the grid?

The perfect offshore substation should carry the "Made by Alstom" stamp. But seriously, many books could be written about technical details. Besides aiming for standardization, when it comes to substations the most important element is that "form follows function". This means that electrotechnical requirements are given and the platform is build around it accordingly, not the other way around.

Interview with Thorsten Schwarz of General Cable / Norddeutsche Seekabelwerke GmbH (NSW)

"In calls for tender for HVDC grids, converters and cables must be seperated to increase competition in the short run."



Thorsten Schwarz, Managing Director/ NSW

○ General Cable is again one of the major sponsors of the WINDFORCE conference. Why?

General Cable is interested in the development of offshore wind energy for many reasons. Of course offshore wind energy is a growth industry for which we prepared ourselves by investing and setting up a production facility in Germany as early as 2008. Moreover, with our plant in Nordenham we are a member of neighborhood of the future offshore windparks. Thus we believe we also have the social responsibility to promote this new industry, which is so important to the region. With the WINDFORCE conference, WAB has repeatedly succeeded in bringing together the offshore wind energy industry, and has always made it an enjoyable experience.

How much money has General Cable invested in the offshore wind energy business to date?

There are two levels to answer this question. Over the past years we have invested approximately € 80 million in our facilities in Nordenham. We have also entered into long-term contracts to charter ships. Although strictly speaking these are not investments, these contracts oblige us to buy ship time over the next five years. Taken together, investments and long-term expenses make our commitment to offshore wind energy considerably greater than the initial investment already mentioned. This is really a record investment, considering our company's annual gross revenue in this sector to date.

○ That's a lot of money for an industry in which development is currently more shaky than stable.

True, there is an operational risk. The delays we are beginning to see in the construction of HVDC (high-voltage direct-current transmission) grid connections could affect us as well. Should the projects require us to change the schedule for installing array cables or installing HVAC transmission lines between HVDC substations and respective wind farm substations, the worst-case scenario is that we could end up having paid 15 months of ship time for nothing. We would then have to negotiate with the wind farm investors or the grid operators and reach an agreement as to who will cover the costs.

That brings us to the heart of the current debate. Grid operators maintain that one of the reasons for delays in developing offshore grids is that contractors lack adequate capacity. What do you think of this reproach?

I think that at the present stage, in which we are ramping up the supply chain for the offshore wind energy industry, it's wrong to start pointing fingers. This doesn't help anyone. The reasons for the delays we are beginning to experience in the installation of offshore grids are complex and not due solely to supply chain problems, or in other words, the suppliers. We have spent the past year and a half looking closely at HVDC technology for offshore applications, and as of today in spite of the fact that we definitely possess the technical expertise to do so, we will not supply HVDC cables for offshore projects. The overall level of risk is too high, which is to say that expected revenues are not high enough to balance the contractual risk profile and liability issues generated by the joint and several liability structure that is currently requested for German projects. By the way, analysts and shareholder representatives also take this view. It is the social responsibility of the government, grid operators and the supply chain - I do not mean to exempt us from this responsibility - to create joint structures to develop the necessary capacities for undersea and HVDC cables.

What does this mean exactly?

I do not wish to address issues, that are right now being discussed in various working groups. There is really a great deal of expertise gathered



in these groups. We continue to keep a close watch on current HVDC calls for tenders. What we are also seeing is that there are indeed a number of new potential contractors. However, their response to new invitations to tender is muted. In my view this is because grid operators insist on joint and several liability structures, which the market will not bear. This means that contracts offered by grid operators require that contractors supply both converters and marine cables. At this time however, there is only one fully integrated supplier on the market that is able to supply both components. If for instance General Cable were to participate as a consortium partner in such a call for tenders. our investment would amount to € 200 to 300 million. But we would have to accept a total order volume of nearly € 1 billion in a joint and several liability. It would be a situation in which we would have absolutely no control over risks that are perhaps hidden in other parts of the contract. So we very consciously refrain from participating in this kind of consortium. That is why we are recommending - and not for the first time - that in calls for tender for HVDC grids, converters and cables must be separated to increase competition in the short term.

Does that mean that no progress is being made in the installation of offshore grid connections?

In my opinion this cannot be ruled out. I have also heard critical comments from investors regarding timeline and market forces. The present market situation, in which hardly any fully integrated contractors exist, coupled with the ever-increasing performance requirements of planned systems, creates a risk structure for which the industry has yet to prepare itself. It will simply take years if the government or grid operators do not start offering accompanying measures or stronger incentives.

That sounds rather bleak.

It doesn't have to be. The idea of shifting the entire technical and commercial responsibility to the contracting industry is just too onesided. In industry, the normal procedure in such pilot projects is that commissioners and contractors share the risk. Our neighbours in the U.K. and France have several interesting approaches. In some countries and industries for instance, suppliers of specialized cables have to submit a system to a qualified study paid for by the grid operator. In this case the grid operator covers part of the costs of development and the qualification procedure before a notice of tender is even issued, thus ensuring competition later on.

○ In Germany, there is currently a great deal of debate regarding the issue of liability for damages to cables, which is of particular concern to grid operators. What is General Cable's experience with cables for the telecommunications industry and how is liability handled in that sector?

That is an interesting question. But we must be careful when making comparisons. Operational structures in the telecommunications industry

are different and spread over a larger number of layers of services. In the telecommunications industry it is customary for the developer to construct the entire facility. In contrast, here in Germany in the offshore wind energy industry, we differentiate between wind farm and transmission system operators. The fact that there is debate surrounding the question of liability in offshore projects comes as no surprise. There is no such debate in the telecommunications industry because the owner-developer is responsible for the complete construction. When we take on a project awarded by a telecommunication systems operator, it is always a full turnkey project so there are no parallel contractors involved. Multi-contracting creates an entirely different situation in offshore wind farms, which is why it unfortunately cannot be compared to our experience with telecommunications contracts.

Where we can definitely learn something from the telecommunications industry is in the field of maintenance consortiums. In these structures, transmission systems operators in a dedicated region cooperate to finance the ship capacities that need to be available exclusively for fast repair work at short notice. This would certainly be a model for the North Sea region since in Germany and England the required critical mass of operators already exists.

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Alstom is the world leader in offshore wind farm AC grid connections, with eleven projects completed or under construction in Europe. We also provide innovative HVDC solutions.

> Alstom offers the Haliade™ 150. the first new generation 6 MW offshore wind turbine.

> > www.alstom.com

We are shaping the future ALSTOM



ALSTOM



YOUR PARTNER FOR WIND ENERGY SOLUTIONS

The wind energy market is a constantly growing industry and an important contribution to climate protection. In this respect the sophisticated design of wind turbines and the electrotechnical equipment plays a key role and is of major importance to secure maximum efficiency.

Alstom delivers turnkey solutions that are exactly tailored to the technical and economical needs of your project - now and in future times. Through our global expertise in wind turbine manufacturing and transmission in electrical grids we are able to design, realize and manage your entire onshore or offshore wind farm.

Alstom Grid is designing wind farm substations with high configuration flexibility, which ensures safe operation in harsh environments. Especially our self-floating and self-installing offshore substation concepts minimize the installation risk while ensuring commissioning quality and reduction of the ecological footprint. Our service teams give you full support to optimize the asset life-cycle through tailored condition-based maintenance.

Alstom builds and operates wind farms globally since 1981, with more than 2,200 turbines currently installed or under construction in more than 120 wind farms, delivering over 3,000 MW.

It designs, assembles and installs onshore wind turbines spanning 1.67 MW to 3 MW, providing solutions for most geographic and weather conditions.

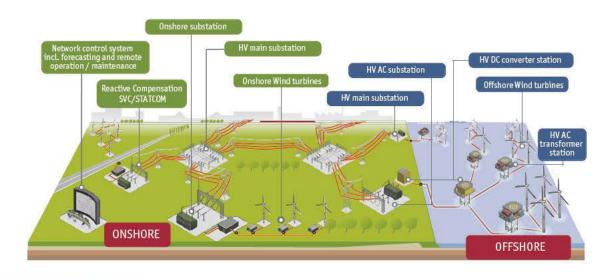
Alstom has installed the first unit of the Haliade™
150 – 6 MW: the first new generation large offshore wind turbine, incorporating its highly reliable

ALSTOM PURE TORQUE® technology.



ABOUT ALSTOM

Alstom is a global leader in the world of power generation, power transmission and rail infrastructure and sets the benchmark for innovative and environmentally friendly technologies. Alstom builds the fastest train and the highest capacity automated metro in the world, provides turnkey integrated power plant solutions and associated services for a wide variety of energy sources, including hydro, nuclear, gas, coal and wind, and it offers a wide range of solutions for power transmission, with a focus on smart grids. The Group employs 92,000 people in around 100 countries. It had sales of € 20 billion and booked close to € 22 billion in orders in 2011/12.



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General Cable

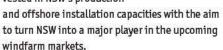


Turnkey solutions for the future, delivered today.

General Cable Corporation (NYSE: BGC), a Fortune 500 Company, is a global leader in the development, design, manufacture, marketing and distribution of copper, aluminum and fiber optic wire and cable products for the energy, industrial, and communications markets.

With sales of over € 4.5 billion, 47 manufacturing locations and over 11,900 workers who provide service to a global network of clients worldwide, General Cable Corporation, a company in constant expansion and development, comprises General Cable North America, General Cable Europe & Med, and the Rest of the World.

Its Nordenham facility in Germany forms General Cable's global competence center for submarine cable solutions. A wholly-owned subsidiary of General Cable since 2007, NSW has been one of the world's leading companies in the field of submarine telecommunication cables for over 111 years. Starting already in 2007, General Cable has invested in NSW's production



Today, NSW can draw upon extensive experience in delivering and laying cables for the growing offshore wind industry. The company supplies individually tailored solutions for power transmission, both for in-field cabling of the wind turbines, and also for connecting windfarms to transformer substations. NSW ₱° Submarine Power Cables are supplied in all the required

NSW has an unrivalled track record of successfully delivering submarine cable installation projects. Reliable completion of projects in the North and Baltic Seas has made NSW a much-indemand partner for national and international power utilities. Apart from NSW's long-term experience, customers benefit from state-ofart production facilities, tailored installation equipment, and, last but not least, NSW's ideal location directly at the North Sea.

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The long road to grid connection

Offshore wind energy is expected to play a key role in Germany's energy turnaround. For all those engaged in the industry, however, the issue of delayed grid connections at sea is proving to be the litmus test as to whether this role can be fulfilled. Along with the challenges posed by the construction of huge converter stations are the issues of liability, capital and a grid planning strategy that is binding.

In Germany, plans are being made for offshore wind farms in the North and Baltic seas. By the end of 2011, the Federal Maritime and Hydrographic Agency had given approval to a total of 28 wind farms comprising 2,027 turbines. A further 84 applications are currently at various stages of the approval process, the majority of which are planned for the North Sea. Nearly all these wind farms have to be constructed far out at sea to take account of the Wadden Sea world heritage site off Germany's North Sea coast and the much-used German Bight shipping routes that adjoin it.

Position paper was expected to lead to a breakthrough

In contrast to other European core markets, it is not Germany's wind farm planners that are responsible for grid connection at sea but the transmission system operators (TSOs). This arrangement does not apply to a wind farm's internal transformer platforms but to power transmission between the wind farm and the coast. The state-owned Dutch company TenneT is at present responsible for this in the North Sea, having taken over the extra-high voltage networks from transpower, formerly E.ON, at the start of 2010, and in the Baltic Sea the responsibility lies with 50Hertz Transmission. Policymakers for Germany's offshore wind industry were



Cable-laying – at present only ABB, Nexans and Prysmien are able to manufacture export cable for connections. Photo: ABB

able to wring such a connection arrangement from TSOs way back in 2006, following much discussion about the high costs and distances to the coast involved. The enactment of the so-called Infrastructure Acceleration Act obliged TSOs by law to provide the most economic and technically viable grid connection for offshore wind farms. This innovation did not have the desired effect, however; instead, discussion in Germany about the grid highlighted a prover-

bial chicken-and-egg dilemma and the issue of stranded investments. While TSOs feared that the grid connection would be in place but not the wind farm, developers argued that precisely the opposite might happen.

A revised position paper in 2009, the content of which was accepted by all sides, was expected to finally lead to a breakthrough. Its essence was a solution where wind farms and their grid





Heerema – the DolWin Alpha platform is currently under construction in the Heerema specialist shipyard in the Netherlands.

The colossus is 77 metres long and 45 metres wide. Photo: TenneT NL

connections were constructed and completed in tandem. Germany's Federal Network Agency stipulated several criteria that developers had to comply with to obtain an unconditional and legally binding grid connection agreement from the TSO. Along with the completion of licensing procedures, for example, this includes binding agreements for the financing and ordering of components. If these requirements are met, the TSO has to put the connection out to tender and connect the wind farm on schedule within a period of 30 months.

A change in the law late in 2011 allowed TSOs to allocate ensuing costs to network charges, beginning in the year of start-up, and on the operation of the grid connections to achieve a maximum yield of 9 percent on the equity invested. The arrangement to issue an

unconditional grid connection agreement was initially valid until 2015 and this time limit was then completely removed in 2011. The new position paper, with its clear ground rules for both parties, along with the German government's decision in 2011 to phase out nuclear energy, created a veritable run on offshore wind projects. The advantage of the solution lies in the fact that planners as well as investors do not have to come up with the additional costs of a connection. The major downside is that they do not have control over construction and coordination. The liberalisation of electricity and gas markets in the European Union has brought about a situation in which the control of production and of transport has to be in separate hands, meaning that an offshore wind farm owner is not allowed to operate the grid connection at the same time.

HVDC technology is a must

As virtually all German projects are in locations far from the coast, four large North Sea clusters were formed: DolWin, BorWin, HelWin and SylWin. For cost reasons, this calls for connecting several wind farms by means of a central converter station and designing the export cable so that it is not redundant (n-0). Connecting projects in locations far off the coast is only technically possible by using lowloss high-voltage direct current transmission (HVDC) because transmission with alternating current means that the amount of electricity brought back to land is not economically viable due to high losses. An export cable together with a converter station on land and at sea is needed. The station at sea converts three-phase

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Diele converter station – in the converter station in Diele, direct current from the BorWin Alpha converter station is converted back into alternating current. Photo: ABB

alternating current into direct current. This is transported to land via the export cable, where it is transformed again into alternating current and fed into maximum voltage grids. State-of-the-art technology for such converter stations with maximum transmission capacities of 960 megawatts are so-called voltage-sourced converters (VSC). The distinct advantages of this new technology are that, on one hand, systems at sea can start up without external power input in case of a power failure, and on the other

hand, the aspect of power reversal. This makes it possible for energy demand to be met from the mainland in the event of no wind at all. At present the costs are in the region of € 1.2 million per megawatt of transmission capacity.

What was not taken into account was the hornet's nest of unanswered questions and unsolved problems which today are not only giving rise to a delay of up to two years in grid connections thought to be definitely going ahead, but

also to much disquiet in the industry. The long list of problems begins with TenneT, the transmission system operator. In buying maximum voltage grids from E.ON, the state-owned Dutch concern took on the responsibility for cluster connections in the North Sea. According to its own figures, TenneT has invested € 6 billion in Germany's energy turnaround to date. The lion's share is made up of seven HVDC converter stations, of which two are being initially built for one cluster – HelWin Alpha and Beta.

Resolving the issue of liability risks

The total amount of transmission capacity that has been commissioned amounts to 5.3 gigawatts and is just half of the German government's offshore target for 2020. "We estimate there will be considerable additional costs for forthcoming projects, amounting to a further € 15 billion", says TenneT spokesperson Ulrike Hörchens. That is why the state-owned business put on the emergency brake at the end of 2011 and wrote to operators and policymakers. The Dutch warned of delays, and consider their personnel and financial resources to be overstretched. For the time being they do not want to award any more contracts, demanding instead that the framework conditions in place be brought into line with the burgeoning offshore wind energy industry, thereby providing the long-term expansion planning that has



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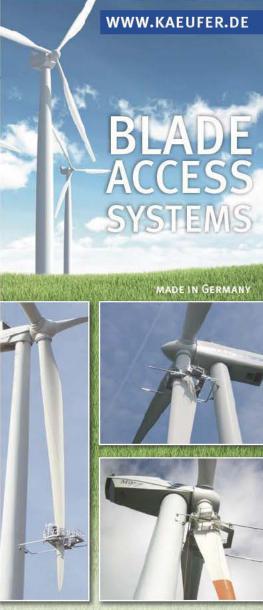
been lacking until now. So far, the connection of offshore wind farms is taking place almost on demand and not in a systematic way. This warning shot by TenneT led to the setting up in January of the Working Group for the Acceleration of Grid Connections for Offshore Wind Farms on the initiative of Phillip Rösler (FDP), Germany's minister of economics. By the end of March, the working group had presented a whole raft of solutions for consideration.

In the eyes of TenneT and investors, the liability risks are a central issue as the TSO is subject to liability restrictions. It remains open to what extent TenneT is liable if a grid connection for two wind farms is not installed, if it is delayed through no fault of its own and if the financial risks are indeed insurable or not. For wind farm operators and investors, the sums involved run into the hundreds of millions. For the time

being, TenneT wants to put a cluster connection out to tender if the German government moves quickly to make it clear how the liability issue stands. "We need clear rules. The insurance market only insures what its resources allow. The rest has to be shared out and the solutions deemed acceptable for the capital market. TenneT, for instance, has made agreements with Mitsubishi about financial participation in two grid connection projects, under the proviso that liability risks are clarified", says Hörchens. Germany's environment ministry and its ministry of economics both want to solve this problem before the summer break by changing the German Energy Act. A draft amendment, currently undergoing interministerial consultation, specifies that a TSO pay the operator a lump sum compensation of 80 percent of lost feed-in remuneration from the fifteenth day of a feed-in not taking place in the event of a

 ${\it Platform\ at\ sea-BorWin\ I\ is\ to\ date\ the\ world's\ first\ offshore\ wind\ farm\ with\ an\ HVDC\ connection.}$ ${\it Photo:\ ABB}$





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Platform installation – there are only two floating cranes in the world that can handle massive topside weights; one of them is the Thialf.

Photo: ABB

failure or a missed deadline for completion of the connection. A TSO can then allocate the costs to the grid revenues and pass them on to electricity consumers. "The amendment means that liability risks will be restricted and investor involvement strengthened as a result of a change in the German Energy Act", explains Ann-Christin Wiegemann, press spokesperson for the ministry of economics.

A lack of standards

This measure alone would not bring about the acceleration needed, because the connections themselves present a very real technical challenge. While Nexans, Prysmien and ABB are the only three producers of HVDC cable in the

world, only ABB and Siemens have mastered VSC technology to date. They are constructing two converter stations, that is to say four units, for TenneT. French-owned Alstom, a third company, recently confirmed that it has also mastered the new technology and will enter the commercial market. In the U.K., for example, a demonstrator with a capacity of 25 megawatts has been set up to make this technology verifiable. In practical terms, the conversion is a Herculean task, as the construction and planning of a station at sea involves 500 specialists. Each station is in effect custom-made to the rated output of the wind farms being connected. As no standards exist for the construction, those involved have to first get their plans certified. There then follows a three-stage approval process carried out by Germany's Federal Maritime and Hydrographic Agency. As a result of the vast amount of

resources going into planning, certification and documentation, as well as the requirement to avoid risks for an operational period of at least 20 years, delivery times for these constructions have since been extended from 30 to a good 50 months. This affects Siemens in particular as it has to extend the deadline for the delivery and installation of two of the four converter stations from 2012 to 2013. "In Germany the approval procedures are extremely complex in nature and we do not have the expertise yet. With a lack of construction standards and norms and with differing transmission capacities, each station is practically custom-built and at very high cost", is how Torsten Wolf, press spokesman at Siemens, explains the delays.



Complex structures

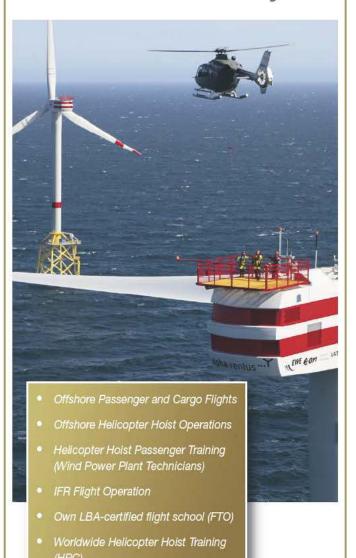
Until now, initial experience with the operation and planning of HVDC connections for offshore wind farms has been confined to Germany. With its 400 megawatt grid connection for BorWin I, ABB had constructed the world's first HVDC connection for an offshore wind farm with a cable length running to 200 kilometres. Since 2010, the Bard wind farm has been connected to the mainland via a record-breaking transmission voltage of 150 kV. Compared with a three-phase alternating current connection, and taking cable length into account, the resultant losses are 25 percent lower than those for a comparable three-phase connection. In general, the losses at both converter stations on land and at sea amount to only 1 percent in each case. ABB was able to once again considerably improve performance for the next project: the DolWin Alpha converter platform will have a capacity of 800 megawatts and connect up two wind farms. ABB was able to more than double its transmission voltage with 320 kV. The DolWin Beta platform that is due to follow will reach a transmission capacity of a massive 924 megawatts.

The structures are somewhat reminiscent of the silhouette of a cruise liner rather than an interconnector. For example, DolWin Beta towers 80 metres above sea level, has a length of 77 metres and is 45 metres wide. The total weight of such cluster stations is rapidly approaching the 14,000 to 15,000 tonne mark. As the stations' heavy construction components for certain designs can be fitted together only out at sea, suitable specialised equipment is a limiting factor. There are currently only two floating cranes in the world that are able to handle such weights. Another factor is that weather windows allow installation only from April to September. Both together make precision landing an absolute necessity. For this reason ABB, together with the Aibel shipyard, its Norwegian technology partner, has come up with a new concept - the DolWin Beta converter platform will have a gravity foundation. Following manufacture, tugs will tow the floating structure out to the construction site, where the hollow foundation bodies will be filled with ballast and the construction lowered down to the sea bed. This should cut construction time as well as the number of workers needed.



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To get round the limitation resulting from the floating crane shortage, Siemens is turning to the Wind Power Offshore Substation (WIPOS). For this, the topside is towed into the construction site on a self-righting floating platform and lifted onto the foundation without using a special crane. Siemens has instructed Nordic Yards, a specialist shipyard, to build steel structures for four platforms. Some 941 workers alone are engaged in the construction of three converter stations at locations in Wismar and Warnemünde in Germany's Baltic Sea.

Proposals are on the table

In the meantime, it has become clear that things are taking longer than expected and all involved are entering new territory when it comes to the technology required. To get close to the 30-month time span originally envisaged for construction, the acceleration working group, under the direction of the Offshore Wind Energy Foundation, put forward a number of recommendations. To alleviate the financial

situation, it was proposed that the state-run KfW development bank step in, third parties get involved in the construction and operation of grid connections, special levies be raised and risks socialised. Ground-breaking decisions were also called for. A master plan for grid expansion is still lacking. Other key proposals relate to the acceleration of grid connections, including the creation of standards and implementation schedules, the synchronisation and optimisation of procurement and tendering procedures, and the concern that tender for

TenneT Germanys HVDC offshore grid Projects with offshore grid connection commitment from TenneT

Cluster	Capazity [MW]	Connected windfarms
BorWin 1	400	Bard Offshore 1
BorWin 2	800	Global Tech I, Veja Mate
BorWin 3	660	Albatros I, Deutsche Bucht, EnBW Hohe See
DolWin 1	800	Borkum West II, MEG Offshore I
DolWin 2	883	Borkum Riffgrund, Delta Nordsee I und II, Godewind I und II
DolWin 3	911	Borkum Riffgrund, Borkum Riffgrund 2, Borkum Riffgrund West
HelWin 1	583	Meerwind Süd/Ost, Nordsee Ost
HelWin 2	288	Amrumbank West
SylWin 1	864	Butendiek, DanTysk, Sandbak24

Source: WAB, TenneT, Büro für Energiewirtschaft und technische Planung





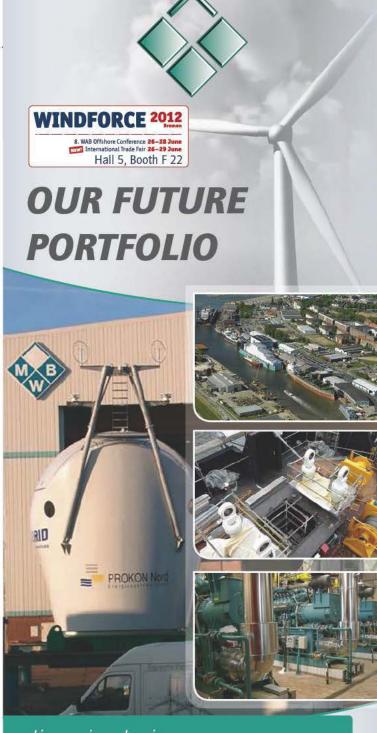
grid connections begins at least a year earlier than has been the case to move things along more quickly.

Policymakers need to come up with solutions, but the damage done cannot be overturned. Grid connections delayed by up to two years cannot be put right even if work now proceeds at breakneck speed. Above all, the delays are leaving a big dent in the supply industry which, having placed its trust in the government's decision to effect an energy turnaround, invested a lot of money in new factories on the coast. Simply resolving issues of liability is not enough. Politicians remain vague, however. At a first energy summit at the end of May in Berlin, Chancellor Angela Merkel met with the prime ministers of Germany's 16 states. The energy turnaround was at the top of the agenda. However, the meeting did not end with quantifiable results for the offshore industry. "Solutions for the industry have to be on the table by the summer break and proposals made by the acceleration working group must be implemented quickly", urges Ronny Meyer, managing director of WAB, the wind energy agency.

* TenneT has so far put out to tender eight grid connections. The Riffgat project is being connected directly via a three-phase power cable, owing to the short distance to the coast. SylWin Beta has not yet been put out to tender as precise details of rated output of the wind farms to be connected are still not available.

Table: Torsten Thomas

 Please find cluster substations at WAB European offshore wind project map in this issue at page 56.



- ship conversion and repair
- installation of ballast water treatment system
- offshore wind operation & maintenance facilities and concepts
- engine maintenance and repair
- combined power & heat plants
- installation of Dry Exhaust Gas Cleaning Systems

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Conference **Programme Overview**

MONDAY, 25 JUNE 2012

Excursion to Bremerhaven 11 a.m. - 5 p.m.

TUESDAY, 26 JUNE 2012

Senate Reception at Bremen Town Hall / 7 p.m.

Opening of Conference

WEDNESDAY, 27 JUNE 2012

CONFERENCE KEYNOTES 10 - 11 a.m.

11 a.m. - 12 p.m. PANEL DISCUSSION

Grid connection for offshore wind energy: Where are we now, what is the right way ahead, what action should we take?

Lunch (12.30 - 2 p.m.)

2 - 5 p.m.

Hall 4.0 Offshore Grid I

Hall 4.1, Room 1 Insurance

Hall 4.1, Room 2 Pile-Driving **Noise Protection**

Coffee break (3.30 – 4 p.m.)

7 p.m. - midnight MARITIME WIND DINNER, Bremerhaven Offshore-Terminal ABC-Halbinsel



WINDFORCE 20

THURSDAY, 28 JUNE 2012

9 a.m. -

SESSION

12.30 p.m.

Hall 4.0 Offshore Grid II Hall 4.1, Room 1

Hall 4.1, Room 2 Offshore financing Offshore Logistics

Coffee break (10.30 - 11 a.m.)

Lunch (12.30 - 2 p.m.)

2 - 5 p.m.

SESSION

Hall 4.0 **Offshore** Special Ships Hall 4.1, Room 1 HSE - Health, Safety and Environmental Protection

Hall 4.1, Room 2 Offshore Job Qualification

Coffee break (3.30-4 p.m.)

6 p.m.

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The TED (televote) survey

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Im Rahmen der TED-Befragung können Sie auf aktuelle Fragen der Windenergiebranche reagieren. Zur Durchführung wird Ihnen ein Sender ausgehändigt, mit dem diese Abstimmungen während der Konferenztage erfolgen.

Die TED-Fragen sind eingebettet in das Tagungsprogramm und werden durch den Vorsitzenden der Veranstaltung per Leinwand präsentiert. Auf die gestellten Fragen können Sie eine der vorgegebenen Antwortmöglichkeiten geben.

Die Ergebnisse der Abstimmungen werden unmittelbar im Anschluss per Leinwand präsentiert und bieten so wertvolle Impulse für die Diskussionen. Gleichzeitig erhalten Sie einen Eindruck vom Meinungsbild der Branche zu aktuellen Herausforderungen.



WINDFORCE 2012 Conference Programme

WEDNESDAY, 27 JUNE 2012

10 - 11 a.m. Conference Keynotes

- WAB, Ronny Meyer
- 🗘 Scottish Government, Minister for Energy, Enterprise & Tourism, Fergus Ewing
- Senator for Environment, Construction and Transport, Dr Joachim Lohse
- Norddeutsche Seekabelwerke (NSW) General Cable Group, Thorsten Schwarz
- ALSTOM Grid, Reinhard Bahrke



Scottish Government, Minister for Energy, Enterprise & Tourism, Fergus Ewing

Mr Ewing was elected as MSP for Inverness East, Nairn & Lochaber in 1999 and re-elected in 2003, 2007 and 2011. Prior to being elected, he ran his own law practice and developed SNP policy on small business and other matters as well as serving on the party's national executive. He has served on a number of Scottish Parliament committees including the Subordinate Legislation Committee, Enterprise & Lifelong Learning, Finance, Local Government & Transport committee, and was previously Shadow Minister for Transport, Tourism & Telecommunications and Community Safety Minister during 2007-11 administration.



Senator for Environment, Construction and Transport, Dr Joachim Lohse

Dr Joachim Lohse studied chemistry and geoscience in Hamburg and Southampton from 1976 to 1983. In 1988 he completed his Dr rer. nat. degree in marine geochemistry and became a founding partner of the Ökopol Institute for Environmental Strategies in Hamburg, where he served from 1989 until 2003 as one of its executive directors. From 2003 until 2009, he headed the Öko Institute for Applied Ecology in Freiburg. In 2010, the Kassel city council elected him to full-time councillor, and in the same year he became head of the City of Kassel's department for transport, environment, urban development and construction. Since June 2011 he has been senator for environment, construction and transport in the City of Bremen.



Norddeutsche Seekabelwerke (NSW) General Cable Group, Managing Director, Thorsten Schwarz

Thorsten Schwarz started his professional career at DaimlerChrysler Aerospace, where he was a senior researcher and knowledge management expert. In 2000 he joined the RWE Solutions Group as Head of Marketing and Sales. In 2003 he took on a Sales Director role in NUKEM Technologies, where he successfully saw through the company's entry into the highly competitive French and Spanish markets and expanded its existing footprint in Southeast Asian markets. In 2009 Mr Schwarz joined Norddeutsche Seekabelwerke as Senior Vice President of Sales, Marketing and Projects. In 2010 he was appointed Managing Director. As graduate of the University of Stuttgart, Mr Schwarz holds an aerospace engineering degree.



ALSTOM Grid, Commercial Vice-President CEU, Reinhard Bahrke

Reinhard Bahrke has been Commercial Vice-President of the Central Europe subregion since 2010. After graduating in electrical engineering studies in Rostock and Wismar, Reinhard took over engineering activities at Elektroprojekt und Anlagenbau (now Elpro AG). After 15 years he became a member of the board of Elpro. In 1992, Reinhard changed his job to start in the Sales Team of AEG in Berlin. After holding several positions in the Sales team, he became Sales Director for Eastern Germany. In 2004, the company changed to AREVA Energietechnik and Reinhard became the Regional Sales Director for Northeast Germany. When AREVA sold its transmission business, Reinhard became Commercial Vice-President for the Central Europe region.

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WEDNESDAY, 27 JUNE 2012

11 a.m. -

PANEL DISCUSSION

12 p.m.

Grid connection for offshore wind energy: Where are we now, what is the right way ahead, what action should we take?



Presenter: Andreas Neumann, Radio Bremen TV

- State of Lower Saxony, Minister for Environment, Energy and Climate Protection, Dr Stefan Birkner
- 🗘 EnBW Erneuerbare Energien, Stefan Thiele
- TenneT Offshore, Guido Fricke
- 🗘 ABB, Raphael Görner
- ALSTOM Grid, Uwe Gierer
- Offshore Wind Energy Foundation, Jörg Kuhbler



State of Lower Saxony, Minister for Environment, Energy and Climate Protection, Dr Stefan Birkner

Dr Stefan Birkner completed his law studies at the University of Hanover in 1998 and was awarded his doctoral degree from the European University Viadrina in Frankfurt/Oder in 2002. From 2003 to 2005 and from 2007 to 2008 he was public prosecutor, and latterly, district court judge at Neustadt am Rübenberge District Court. From 2005 to 2007 he was chief of staff for the Lower Saxony Minister for Environment and Climate Protection, Hans-Heinrich Sander. From 2008 until 2012 he served as state secretary in the Lower Saxony Ministry for Environment and Climate Protection. From 2004 until 2008 he was secretary-general of the FDP political party in Lower Saxony, and became regional chairman of the FDP in Lower Saxony in September 2011. Since January 2012 he has been the minister for environment, energy and climate protection for the State of Lower Saxony.



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EnBW Erneuerbare Energien, Spokesperson for the Managing Board/CEO, Stefan Thiele

As CEO and spokesperson for the managing board of EnBW Erneuerbare Energien (EEE), Stefan

Thiele is responsible for the expansion of renewable energies at EnBW. Previously he was CEO and

spokesperson for the EnBW sales and service company for six years. Stefan Thiele studied electri-

spokesperson for the EnBW sales and service company for six years. Stefan Thiele studied electrical engineering at Mercator University in Duisburg and RWTH Aachen University. Prior to his studies he completed an apprenticeship as power plant electrician at Veba Kraftwerke Ruhr, now e.on Power. Prior to joining EnBW, he worked for four years at VDEW, which today is BDEW.

TenneT Offshore, Managing Director, Guido Fricke

Having studied Finance and Economics at Cologne University, Guido Fricke has been working for almost 20 years in the field of Energy and Utilities, working in various different departments and companies within the E.ON Group and its predecessors. In 2008 he was appointed into the post of commercial managing director of E.ON's and now TenneT's offshore grid connection company. Guido Fricke is also member of the board of BritNed, the TenneT and National Grid joint venture interconnector between the Netherlands and Great Britain.



ABB, Head of Marketing & Sales, Raphael Görner

Dipl.-Wirtsch.-Ing. (FH) Raphael Görner has been working since 2011 as Head of Marketing & Sales in the business unit Grid Systems at ABB AG, Germany. He started his professional career, after his study of Business Administration and Engineering, as Trainee in the Strategic Marketing Power Technologies. Among others he was also working with the ABB Competence Center for High Voltage Direct Current (HVDC) in Ludvika, Sweden. In 2008 he changed into the sales of the business unit Grid Systems. In his function he is responsible for the Marketing & Sales of grid connections for offshore wind farms.



ALSTOM Grid, Sales Director Wind Power Offshore, Uwe Gierer

After studying industrial engineering at the Technical University of Berlin (1986–1992), Uwe Gierer held several positions until 2000 as project manager, including in the strategic planning department of Lufthansa Airport Services in Berlin. From 2007 until 2007 he held various posts as project manager for ABB in Germany and in Algeria. Since September 2007 he has been with ALSTOM Grid (formerly AREVA Energietechnik) in sales for offshore wind energy, responsible for AC transformer substation projects in Germany and the Netherlands.



Offshore Wind Energy Foundation, Chairman of the Board, Jörg Kuhbier

Mr Kuhbier has been active since 1969 in various agencies of the City of Hamburg, and since 1981 as Senate director and senior official in the city's environment agency. From 1983 to 1991, he was a member of the Hamburg Senate, responsible for environmental issues, and supply, disposal and energy policies. Since 1991, he has been a lawyer in Hamburg and since 2000 a senior partner of the Kuhbier. Rechtsanwälte law firm. Honorary activities include his positions as chairman of the board of the German Offshore Wind Energy Foundation and as executive director of the Offshore Wind Energy Forum.

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WEDNESDAY, 27 JUNE 2012

2 – 5 p.m. SESSION A – Offshore Grid I





Chair: Kuhbier.Rechtsanwälte, Lawyer and Partner, Dr Ursula Prall

Dr Ursula Prall is a lawyer and partner with Kuhbier.Rechtsanwälte and managing director of Offshore Wind Energy Forum, an association of most German project developers of offshore wind farms. Since 2004, her main working area has been in legal and political aspects of the promotion of offshore wind energy in Germany.



1 The benefits of operating future offshore wind farms at higher (52-66kV) voltages

Carbon Trust Initiative, Offshore Wind Accelerator Delivery Manager, Breanne Gellatly, UK Breanne joined the OWA to follow her passion for the development of the renewable energy industry. She started her career with GE Energy in the Operations Management Leadership Program where she worked with technical and supply chain experts in the wind and hydro businesses to deliver high quality engineered products in the most efficient and safe ways possible. She later joined a small start-up wind resource assessment company where she managed the complexities of designing wind farms within the constraints of government incentive schemes and regulations. Just prior to joining the OWA, Breanne worked for a strategy consultancy, Booz & Company, as an Associate in the Operations practice.



2 Strategies for successful cable installation

Norddeutsche Seekabelwerke, Director Project Support & Engineering, Tom Schmitz

Tom Schmitz started his professional career as a Geophysical Researcher in the Department for Marine Geophysics of the Alfred Wegener Institute for Polar and Marine Research where he was involved in the geophysical analysis and interpretation of sedimentary layers in the Northeast Greenland Shelf. In 2005 he joined Norddeutsche Seekabelwerke as Surveyor and Project Engineer in the Project Implementation Department. Since 2010 he has been responsible as Director for Project Support & Engineering. As a graduate of the Technical University of Aachen, he holds a diploma degree in Geology and Geophysics.



3 Lessons learned and key trends in cable protection systems

Tekmar Energy Ltd, CEO, James Ritchie, UK

Tekmar Energy has worked on over 15 of the world's largest offshore wind farms to date and has innovated the cable installation and long-life protection of subsea power cables. James Ritchie, CEO of Tekmar Energy, has worked with the company since it started in 2007.

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4 Contractor's perspective on scour protection installation

Dredging International nv, DEME Group, Engineering Specialist, ir. Martijn Hovestad Martijn Hovestad graduated from Delft University of Technology with an MSc degree in civil engineering, specialising in coastal engineering. He joined Tideway Offshore Contractors, part of the DEME Group, in 2006, initially working on the NorNed HVDC Cable project. After completion of this project, he became an engineering specialist within Tideway, focussing mainly on rock placement operations. As such, he has supported many projects for the oil and gas industry, and more recently, for offshore wind farms, including Thornton Bank (B), Riffgat (D) and Gwynt-y-Mor (UK).



5 An insurer's perspective on array cable-laying experience in the UK – the industry's track record on array cables – the causes behind array cable failures – consequences from the view of an insurer

Marsh Germany, Renewable Energy Practice Leader, Ralf Skowronnek

Ralf Skowronnek's engineering degrees (Dipl.-Ing./Dipl.-Wirt.-Ing.) led to his career starting as turbine millwright and industrial engineer. Ralf (46) has had 20 years of experience in insurance, including underwriting, loss adjusting, risk consulting and insurance broking, as well as 15 years in renewable energy, seven of them in offshore wind. Marsh Hamburg Offshore has risk and claims experience with 5,000 MW of offshore wind capacity. In November 2011, the German government appointed Ralf and his Marsh team to be risk and insurance advisers on Germany's offshore grid.



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WEDNESDAY, 27 JUNE 2012

2 – 5 p.m. SESSION B – Insurance





Chair: Nordwest Assekuranzmakler, Managing Director, Dr rer pol Patrick Wendisch



6 Keynote presentation on offshore wind insurance and current developments

Nordwest Assekuranzmakler, Managing Director, Dr rer pol Patrick Wendisch
Diploma in Mechanical Engineering and Business Administration — Doctorate in Macroeconomics, Growth Economic Policy — Engineering and industrial insurance career at: Munich Re, South Africa; Allianz, HH; Albingia, HH; Hartford Steam Boiler, USA; Commercial Union, London — Managing Partner of Lampe & Schwartze Group — Managing Partner of Nordwest Assekuranzmakler — Company of Lampe & Schwartze Group — Several studies for public and private projects — Lectures in engineering insurances — Several lectures in offshore wind insurance.



7 Codan's view of Germany's offshore wind market and the lessons learned from other international offshore wind insurers

Codan Insurance, part of the RSA Insurance Group, General Manager, Niels Kragelund, DK
Born January 5th, 1948. Worked in the Insurance Industry for 46 years. Head of Nordic Construction, Power & Engineering. General Manager for RSA Global Renewable Energy Division.



8 Insurability of offshore wind projects in the context of project owners, investors, lenders, contractors and operator risk-transfer objectives set against the risk appetite and capacity of insurers

Benatar & Co. Limited, Managing Consultant, Martin Benatar

Martin Benatar, BA, ACII, CIP. Martin's 25 related credentials in offshore wind include 10 German mandates and all internationally financed transactions to reach Financial Close (as of 05/2012) including four German plus acquisition financings and offshore power transmission projects. Benatar and Co. Limited also leads the market on 'conventional' power and space/satellite transactions including the largest ever CCGT IPP project financing and space financing. Aged 47, a dedicated Lenders' Insurance Adviser for 15 years with 25 years of industry experience following University in England and Italy.

6

Session B — Hall 4.1, Room 1





9 Risk assessment of German insurers to the investment scenario for offshore wind energy

German Insurance Association (GDV), Property and Engineering Insurance, Frank Thyrolf Frank Thyrolf has worked in the insurance industry for 20 years and has been consultant at the German Insurance Association (GDV) in Berlin since 1998. His expertise in policy issues and insurance is broad, ranging from nuclear, agricultural and terrorism insurance to climate change and renewable energies. At the GDV, he coordinates the offshore activities of German primary insurers and reinsurers on an interdivisional basis. Since the founding of the Offshore Wind Energy Foundation, Mr Thyrolf has represented the interests of his trade association in the offshore network.



10 Risk assessment of German insurers for i.r.o. investments in offshore wind energy

Swiss Re Europe S.A., German Office, Head Engineering Munich Hub, Harald Dimpflmater Education: Dipl. Wirtschaftsingenieur (Industrial Engineer) Versicherungsbetriebswirt (similar to FCII) Professional Experience: • 14 years Reinsurance: Underwriter Engineering – since 2005 Underwriting Manager · 6 years Broker: Client Manager with focus on industrial business · 7 years Insurance: Underwriter Engineering



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WEDNESDAY, 27 JUNE 2012

2 – 5 p.m. **SESSION C** – Pile-Driving Noise Protection





Chair: EWE, Managing Director, Wilfried Hube

Head of group installing offshore wind farm project, and general manager of Alpha Ventus project; active since 1989 in various divisions of EWE and managing director of EWE since the offshore test field project began. Wilfried Hube is general manager of the Offshore-Windpark RIFFGAT and head of RIFFGAT KG.



11 The challenge of reducing noise during the installation of offshore foundations

RWE Offshore Logistics Company, Senior Manager, Engineering Technology, Fabian Wilke
Fabian Wilke has been head of engineering technology at RWE Offshore Logistics since 2010.
After studying civil engineering, he worked until 2002 at LAP Consulting Engineers in Stuttgart
as a simulation engineer in large bridge construction. From 2002 to 2007 he was a research
associate in offshore wind at the University of Hanover. In 2008 he became project manager
at Bilfinger Berger SE and in 2009 he relocated to the company's civil engineering office in
Hamburg where he was the tender and design manager for various offshore projects.



12 Field report from BARD Offshore 1: Reducing noise with the help of a small bubble curtain

Bard Engineering, Head of the Approval Management Department, Dr Susanne Schorcht
Dr Schorcht received her doctorate in microbiology and molecular biology (DNA biotyping) in
1998. From 1999 to 2003 she worked for a biotec company abroad where she was responsible for
setting up labs and establishing DNA analysis methods for detecting genetically modified foodstuffs. Since 2004 she has applied for the approval of twelve BARD offshore projects in the German and Dutch exclusive economic zones, of which three projects have already received licensing
or construction approval. She attends to the BARD Offshore 1 project to this day.



13 Experience with a large bubble curtain at Borkum West II

BioConsult SH, Managing Director, Dr Georg Nehls

Dr Nehls founded BioConsult SH in Husum in 1998 and has headed the company since then. BioConsult currently has 25 employees, with work focusing on environmental impact studies of birds and marine mammals in relation to wind energy use on land and at sea. Georg Nehls has been involved for more than 10 years in various projects to develop noise reduction systems for offshore pile driving, and he has managed several research projects in this regard. A current project is to develop a large bubble curtain at the Borkum West II offshore wind farm.

Coffee break	
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14 Noise mitigation using a dewatered cofferdam: Test results

Lo-Noise ApS, CEO, Anders Ørgård Hansen, DK

Anders Ørgård Hansen is the CEO of OSK-ShipTech and OSK-Offshore, which is one of the leading maritime consultancy groups in Denmark. Anders is also CEO of Lo-Noise ApS which designs and supplies cofferdams intended to reduce waterborne noise from pile driving. Anders holds a master's degree in Naval Architecture and Marine Engineering from the Technical University of Denmark. In 2010, he was elected Secretary General of the Danish Society for Naval Architecture and Marine Engineering. Anders Ørgård Hansen holds a number of positions on international boards and is a member of DNV Ferry Committee.



15 DanTysk offshore wind farm: Noise protection made to order

Vattenfall Europe Windkraft, DanTysk Project Director, Holger Grubel

Holger Grubel has held various positions within Vattenfall and predecessor companies. Since 2007 he has been working in the area of wind as project leader for the Dan Tysk project and building up project development for onshore wind in Germany. Later he has been in charge of the department for Offshore Wind Projects of Vattenfall in Germany; among its tasks has been the involvement in the first German offshore wind farm, alpha ventus. Today he is Project Director at Dan Tysk, the largest offshore wind project of Vattenfall under realisation in 2012/13.

WEDNESDAY, 27 JUNE 2012

7 p.m. – Maritime Wind Dinner, Bremerhaven, midnight Offshore-Terminal ABC-Halbinsel

KEYNOTE

- DBLG Logistics WindEnergy Logistics, Andreas Wellbrock
- WAB e.V., Ronny Meyer

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9 a.m. – 12.30 p.m.

SESSION D - Offshore Grid II





Chair: Kuhbier.Rechtsanwälte, Lawyer and Partner, Dr Ursula Prall



16 The offshore grid: Is it the bottleneck of the energy turnaround?

German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Head of Division, Dr Torsten Bischoff

Studied Political Science at the Technical University in Braunschweig; worked with different tasks as head of Division for the State Chancellory of the Land of North Rhine-Westphalia, the Ministry for European Affairs North Rhine-Westphalia and the Office of the Federal President. Since 2010, Head of Division "Hydro Power, Wind Energy and Grid Integration of Renewable Energies" in the Federal Ministry for the Environment.



17 Incompatible optimisation? The requirements and consequences of grid regulations for the implementation and financing of offshore projects

wpd offshore, Achim Berge

Achim Berge has been responsible since 2001 for wpd's offshore activities. In addition to overseeing the development of 10,000 MW of capacity, his track record includes the start-up of offices in Sweden, Finland, France and Italy, as well as the achievement of eight building permits for offshore projects, the construction of Baltic 1, Germany's first commercial offshore wind farm, and successful participation in the French offshore tender. Mr Berge holds Swedish and German law degrees.



18 AC and DC cable solutions for offshore wind energy

ABB, Head of Marketing & Sales, Raphael Görner

Dipl.-Wirtsch.-Ing. (FH) Raphael Görner has been working since 2011 as Head of Marketing & Sales in the business unit Grid Systems at ABB AG, Germany. He started his professional career, after his study of Business Administration and Engineering, as Trainee in the Strategic Marketing Power Technologies. Among others he was also working with the ABB Competence Center for High Voltage Direct Current (HVDC) in Ludvika, Sweden. In 2008 he changed into the sales of the business unit Grid Systems. In his function he is responsible for the Marketing & Sales of grid connections for offshore wind farms.

Coffee break	72
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19 Grid Connection Offshore Wind project Gemini

Typhoon Offshore, Head of German Operation, Guido Kumbartzky

Guido Kumbartzky played an active role in the preparation of the BARD Offshore 1 project and started work on the three applications for Dutch windfarms. After half a year he concentrated on the Dutch application and achieved to receive 3 final permits from RWS. He was also responsible for the tender process to apply for the subsidy (SDE) and was the managing director for the Dutch project companies of BARD. After the sale of the projects to Typhoon Offshore he returned to the German offshore market and was responsible for the development of the offshore and also was project leader of a research program for underwater sound noise mitigation. Since May 2012 he is working for Typhoon Offshore and as Head of German Operation representing the company in Germany.

20 Complex technical challenges on the high seas: Operating and replacing the electrical components of offshore substations



tkb.Technologiekontor Bremerhaven, Dr-Ing Falk Lüddecke, and ALSTOM Grid, Sven Höpfner Dr Lüddecke studied civil engineering, with a focus on constructional civil engineering, at the TU Dresden from 1997 to 2002. From 2002 to 2005, he did his doctorate at the BAM Federal Institute for Materials Research and Testing. In 2005, he worked on a research project on the optimisation of cast joints for offshore wind energy facilities. From 2006 to 2007, he worked at KLW Ingenieure where he was responsible for reviewing static calculations. In 2009 he became head of the static and construction department and authorised signatory at Technologiekontor in Bremerhaven.



Sven Höpfner is a member of the VDE (German Association for Electrical, Electronic & Information Technologies). He studied electrical engineering at the University of Applied Sciences for Technology, Industry and Culture (HTWK) in Leipzig. From 2002 to 2007, he worked as research assistant at the Institute of Electrical Power Systems and High Voltage Engineering, TU Dresden. In 2007, he took up the position of design engineer with Areva T&D, which is now ALSTOM'S transmission business, ALSTOM Grid. His primary area of work is wind energy transmission and distribution.



21 Grid connection of offshore wind farms in the Baltic: Plans, experience and prospects

50Hertz Transmission, Head of Offshore Projects, Dr Lorenz Müller

Dr Müller studied electrical engineering at the University of Dortmund and received his doctoral degree from the department of electrical energy supply. In October 2003 he joined 50Hertz Transmission, and from mid-2004 to June 2007 he was head of the customer service and grid usage departments. From July 2007 to March 2011 he was head of portfolio management (long-term energy supply, congestion management, risk management, energy regulation), and from April 2011 to March 2012 he was head of the energy management division and authorised officer (portfolio management in addition to access to the power exchange, grid and balancing group accounting, renewable energy law/cogeneration law management). Since April 2012 he has been head of offshore projects and authorised officer (development of offshore grid connection in the Baltic Sea).

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9 a.m. – 12.30 p.m.

SESSION E - Offshore financing





Chair: KfW-IPEX-Bank, Vice-President, Andrew Eckhardt

Andrew Eckhardt, CFA is a vice-president at KfW IPEX Bank's wind energy team. He has, inter alia, been responsible project manager for the offshore wind farms Meerwind in Germany and Northwind in Belgium. Prior to joining IPEX in 2008, he worked as portfolio and syndications manager at Depfa Bank in Cyprus and as assistant to a member of the German Bundestag. Andrew holds a degree in economics from the University of Passau.



22 Financial risk mitigation for investors: Lessons learned from offshore wind farm installations and CAPEX modelling

GL Garrad Hassan, General Manager, Dr Helmut Klug

General Manager of GL Garrad Hassan Deutschland, with 21 years of wind energy experience, and particular responsibilities for technical due diligence. Regional Manager for GL Garrad Hassan Central Europe, Middle East and Africa. Helmut Klug joined Garrad Hassan in 2006. Previously Vice Managing Director at DEWI (German Wind Energy Institute). GL Garrad Hassan delegate for the Desertec Industrial Initiative (DII).



23 Offshore wind: Who is going to invest?

The Boston Consulting Group, Principal, Dr Gunar Hering

Gunar Hering is a principal based in The Boston Consulting Group's Berlin office. He joined BCG in 2002 and developed deep expertise in green energy, working with energy and industrial goods clients globally. He is a topic expert for wind and solar in the green energy sector. Prior to joining BCG, Gunar worked at the Helmholtz Center for Heavy Ions R&D in Darmstadt and at CERN in Geneva. He holds a Ph.D. in Physics from the Technical University of Darmstadt, a Diploma in Physics from the Friedrich Schiller University in Jena, and a Master's degree from the State University of New York, USA.



24 There will be no white flag ...

Topics for German utilities when assessing investments in OFF-shore

BET Büro für Energiewirtschaft und technische Planung, Aachen, Advisor and Consultant, Dr-Ing Petr Svoboda

Dr-Ing Petr Svoboda has been a chief consultant with ifs (RWE-Systems), Management Engineers and 4C and director of controlling with RWE Fuel Cells, Pfalzwerke and juwi. Since 2010 he has worked as advisor and consultant for BET in Aachen with an emphasis on the conception and project management of renewable energy plants including energy efficiency, regulation, success prognoses, due diligence, income value determination of distribution grids and technology assessment. He has written specialist conference articles, studies and papers and has had some of his work published.

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Coffee break	





25 Costs, savings and risks: Making offshore wind projects bankable

UniCredit Bank, Director, Brad McAboy

Brad McAboy – Director, Power and Environment. Brad joined UniCredit Bank in Munich in July 2011. He specialises in financing projects in the conventional and renewable energy sectors. Brad is currently working on several offshore and onshore wind transactions across Europe. Brad joined Unicredit from WestLB where he was responsible for originating and structuring transactions. Prior to WestLB, Brad was a member of the Leveraged Finance team at Wachovia Bank, N.A. Brad has an MBA from Wake Forest University and a B.S. with honours from North Carolina A&T State University.



26 Recent trends in the financing of offshore wind farms

Green Giraffe Energy Bankers, Managing Director, Dr Jérôme Guillet, F

Dr Guillet is a founder of GGEB, created in early 2010 and focused on renewable energy financial advisory services. He has 15 years of experience in the energy project finance industry, with a specific focus on offshore wind. Under his leadership, GGEB helped close billion-euro financings for C-Power in Belgium and Meerwind in Germany, and it has ongoing mandates in six European countries and North America. Previously, he was Head of Energy in Dexia's Project Finance team, and he supervised the financing of more than 10,000 MW of wind power capacity. He graduated from the Ecole Polytechnique in Paris.



27 Due Diligence: Impact of offshore requirements

Deutsche Offshore Consult, Managing Director, Oliver Spalthoff

In 2009 Mr. Oliver Spalthoff has co-founded the DOC and is acting as managing partner since. Before that he was responsible for the successful market entry of the business unit "subsea power cable" for a North German cable manufacturer. Within this occupation Mr. Spalthoff also took over the executive position of a Joint-Venture concerned with the operation of a cable lay vessel. Mr. Spalthoff has been actively involved in the implementation of offshore projects since 2004 including managing director of the maritime business unit of an infrastructure service company, a subsea cable installation company, a port service provider and numerous shipping companies. Mr. Spalthoff has already been active in the renewable energy sector since his employment at the investment department of a major German bank. Among others his job included private equity capital and project financing as well as IPOs at Germany's "Neuer Markt" (New Market stock exchange).

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9 a.m. – 12.30 p.m.

SESSION F – Offshore Logistics





Chair: Maritimes Cluster Norddeutschland, Head of Office, Lena Kohlmorgen

Lena Kohlmorgen has been head of office at the Lower Saxony branch of the Maritimes Cluster

Norddeutschland since June 2011. Prior to that she served as project manager in the SchleswigHolstein branch of the North German cluster. Ms Kohlmorgen studied international sales and
purchasing engineering at Kiel University of Applied Sciences (FH Kiel) and was awarded a mas-

ter's degree in industrial engineering. After completing her studies she was managing director of the Department of Mechanical Engineering at FH Kiel.



28 At eye level: Safe navigation on marine shipping routes to wind farms at sea

Waterways and Shipping Directorate Northwest, President, Klaus Frerichs

Dipl.-Ing. Klaus Frerichs studied civil engineering at the University of Hanover. Since 1985 he has held various responsible posts within Germany's Waterways and Shipping Administration in the Ruhr region, Bremen and Aurich. Since March 2000 he has been president of the Waterways and Shipping Directorate Northwest in Aurich. He is responsible for infrastructure and the regulation of navigation on the federal waterways in the Ems, Jade, Weser and Hunte rivers, and the inner area of the German Bight off the East Frisian islands.



29 Innovative logistical plans as a competitive advantage

BLG Logistics - WindEnergy Logistics, Managing Director, Andreas Wellbrock

Andreas Wellbrock, forwarding merchant and graduate in Transport and Logistics Engineering, began his career at BLG in 1999 as Managing Director of a JV. Soon afterward, he became the Managing Director of BLG's industrial and production division and seaport division. He also took over responsibility for the business unit wind energy logistics. Having learned the logistics business from scratch, he disposes of more than 25 years of national and international experience in the development and implementation of logistics concepts and operations.



30 Offshore logistics from the operator's point of view

EnBW Erneuerbare Energien, Team Manager Engineering Wind Offshore, Wind Turbine Technology & Installation, Dirk Dollmann

Dirk Dollmann has been at EnBW since 2009 and instrumental in developing its renewable energy division. As team leader of the unit for offshore wind engineering, he is responsible for wind turbine technology and installation. His team supports EnBW's offshore projects in the areas of maritime logistics, construction coordination, wind turbines, offshore substations and array cabling. Mr Dollmann gained many years of international experience in onshore wind energy from prior positions at Enercon and REpower Systems.

 Coffee break	<u> </u>





31 What logistical services can learn from offshore logistics

Logistik Service Agentur, Managing Director, Roger Heidmann

Roger Heidmann, owner of LSA, is a skilled tallyman and graduate industrial engineer. He has been active in logistics planning and operations since 1981. The Logistik Service Agentur (LSA) is an independent logistics management company. LSA provides an intelligent and powerful platform for management-driven logistics concepts. LSA applies expertise coming from 10 years of experience in the offshore wind business.



32 Supply chain management for offshore wind farms: A special focus on the challenges of customs clearance and consultancy

Kuehne+Nagel, Manager, Offshore Logistics, Robert M. Instinsky

Robert M. Instinsky; born October 26th, 1963; nationality: German; married. Coming from an operational air freight background, Robert has worked in diverse work environments such as Sales, Project Management, Trade Lane Accountability and Offshore Logistics. As Managing Director he was at the helm of several forwarding and shipping companies in Europe and is a frequent speaker at international events as well as a consultant to companies which seek intercontinental logistic solutions. Robert's work experience includes various assignments in Australia, South Africa, Norway and Germany.



33 Constructing the BARD Offshore 1 wind farm: Logistical experience

BARD Logistik, Managing Director, Michael Finnern

From 1996 to 2000, Michael Finnern studied European industrial engineering. He began his career at Schenker Deutschland in 2001 and moved to BARD Engineering in 2007 where he headed the logistics department until 2009. Since September 2009 he has been the managing director of BARD Logistik, BARD Logistik Management, BARD Schiffsbetriebs GmbH & Co. Natalie KG, Wind Lift 1 B.V., and BARD Wind Lift 2 (since April 2010). Since March 2011 he has also held the post of deputy head of project management for the BARD Offshore 1 wind farm.





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Offshore-Windenergie -

Design und Installation von Tragstrukturen in der Nordsee Aktuelle Erkenntnisse zu Grout-Verbindungen

(simultaneous translation in English)

5. & 6. September 2012, Atlantic Hotel Sail City Bremerhaven

Prof. Dr.-Ing. Peter Schaumann,

ForWind, Leibniz Universität Hannover, Institut für Stahlbau

Eine gemeinsame Veranstaltung von der ForWind-Academy und dem Haus der Technik e.V. in Essen.

5. September 2012, 10.00 - 18.00 Uhr

- Lastannahmen, Modellierung und Ermittlung der Strukturbeanspruchung
- Entwurf und Bemessung von stählernen und massiven Tragstrukturen Nachweismethoden für offshore-spezifische
- Verbindungen
- aktuelle Forschungsergebnisse zu Grout-Verbindungen
- Konstruktion, Fertigung und Montage Qualitätsmanagement

6. September 2012, 9.00 - 16.00 Uhr

- Baugrunduntersuchung
- Erfahrungsberichte von Offshore-Windpark projekten
- Fundamente für OWEA
- zukünftige Etappen der Offshore-Windenergie in Deutschland

INKLUSIVE EXKURSION ZU DEN OFFSHORE-EXPONATEN IN BREMERHAVEN



2 – 5 p.m. **SESSION G** – Offshore Special Ships





Chair: WINDEA Offshore, Managing Director, Knut Gerdes

Knut Gerdes has long experience as a seaman, captain and marine superintendent. He is managing director of WINDEA Offshore, based in Hamburg. This new joint company will combine years of experience in logistics, shipping, construction, maintenance, repair and coordination for offshore wind farms with the planning and financing of vessels for those projects. He is also managing director of the maritime service company EMS Maritime Offshore, which provides various offshore services such as crew transfer, guard duties, supervision and crew services.



34 IMO proposal: Explanation of the German initiative at the IMO to ensure uniform international safety standards for personnel transfer ships and service vessels

German Shipowners' Association (VDR), Marine Director, Wolfgang Hintzsche
Wolfgang Hintzsche is a captain and master mariner, holds a B.Sc. degree in economics/engineering, and has had 33 years of experience in shipping and shipbuilding. He has done service
on minehunters and minesweepers, bulk carriers, and on ro-ro, heavy lift and semi-container
vessels for Frigga, CF Ahrenkiel and Sloman Neptun. His work experience includes positions
as sales and project engineer at ELNA, area sales manager at MacGregor, managing director at
Jastram, technical director at Shipyard (SET), and general manager at the Peter Döhle crewing
agency. Since 2006, he has been marine director at VDR.



35 First steps towards industrialization of the offshore wind installation market

HGO InfraSea Solutions, Managing Director, Dr-Ing Carsten HeymannDr Heymann has been developing the venture HGO InfraSea Solutions since 2008. He started his

career in 1997 at HOCHTIEF carrying out a variety of construction projects in Europe. Between 2002 and 2006, he gained management experience and training on international strategic projects within HOCHTIEF Corporate Development. Since 2007, he has been engaged in developing the new offshore wind business scheme of HOCHTIEF Solutions AG. Dr Carsten Heymann holds a degree in civil engineering and a degree in business administration.



36 Accessing offshore turbines safely: Siemens' approach

Siemens Wind Power A/S, Head of Siemens Energy Service Wind Offshore, Ken Soerensen, DK Ken Soerensen is Head of the Service Wind Offshore business at Siemens Energy since March 2012. He has an educational background as Master of Science in Electrical Engineering. During Ken Soerensen's professional career he has worked as principal at The Boston Consulting Group from 2000 to 2006, first in Copenhagen and later in Moscow. From 2006 to 2012, Ken Soerensen held different positions at BROEN A/S, last as Group Director being responsible for the Global District Heating & Gas business.

Coffee	break	× -





37 Multipurpose vs. specialised offshore vessels: A naval architectural view of different concepts

Bremen University of Applied Sciences, Head/Professor department for shipbuilding and marine engineering, Prof. Dr-Ing Hans Gudenschwager

Prof Gudenschwager studied shipbuilding at the University of Hanover from 1976 to 1983, continuing at Hanover as research assistant until 1988. He received his doctoral degree in ship design / CAD application from the University of Hamburg in 1988. From 1988 to 1999 he worked both for Bremer Vulkan and Schichau Seebeck Werft in projects, ship design, and ship theory. Since 1999, he has been at Bremen University of Applied Sciences in the department for shipbuilding and marine engineering where he heads the nature and technology section and is associate dean. His area of expertise is in ship design and CAD applications in shipbuilding and marine engineering.



38 Installation and maintenance vessels: Still a bottleneck or can we expect tonnage oversupply?

GRS / GERMAN RENEWABLES SHIPBROKERS, Managing Director, Philippe Schönefeld
Philippe Schönefeld has an industrial engineering degree and a graduate degree (UAS) in
international transport management. His professional career began at Rickmers Shipping in
Hamburg, where he ultimately became responsible for business development and ship brokerage
activities for offshore wind projects. In July 2011, Philippe Schönefeld and his partner Matthias
Mross started up their own business, German Renewables Shipbrokers, one of the first shipbrokers in Europe to target the market for tonnage needed for offshore wind, wave & tidal energy.





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2 - 5 p.m.

SESSION H – HSE – Health, Safety and Environmental Protection





Chair: Deutsche WindGuard, Managing Director, Gerhard J. Gerdes

Gerhard Gerdes has been managing director and senior consultant at Deutsche WindGuard since 2001. He has worked in the field of renewables, with a focus on wind energy, since 1983. He was a science tutor and research scientist at the University of Oldenburg for eight years, and from 1990 to 2001 was head of the system technology department at the German Wind Energy Institute (DEWI) in Wilhelmshaven.

39 European approach to HSE

REpower Systems, tbc.



40 NOW emergency control centre for offshore wind farms

German Maritime Search and Rescue Service (DGzRS), Managing Director / Head of Rescue Services, Helge Udo Fox

Helge Fox is a captain and has an industrial engineering degree in maritime transport (master mariner) and a master's degree in business administration (Bremen University of Applied Sciences; Hanzehogschool, Groningen; Koç University, Istanbul). He was chief of the Maritime Rescue Coordination Centre in Bremen for five years, and is consultant to the German IMO delegation; from 2006 to 2009 he was chairman of the IMO SAR Working Group (COMSAR), and since 2003 has been visiting professor at WMU/Malmö (administration and strategic management). He is a director/trustee of the International Maritime Rescue Federation (IMRF) and has been on fact-finding and field missions to the UAE (IMRF), Uganda (IMRF), Kenya/Tanzania/Iran/Liberia (IMO), and Morocco and Turkey (EU twinning).



41 Requirements for helicopter-based rescue missions in a hostile environment

Wiking Helikopter Service, Managing Director, Alexander von Plato, and ADAC Luftrettung, Director of Medicine, Dr Matthias Ruppert

Alexander von Plato, manager at Wiking Helikopter Service in Sande/Wilhelmshaven, studied industrial engineering at the Technical University of Berlin, focusing on transport and renewable energies. From 2008 to 2011 he was active in shipbuilding at Lürssen Werft in Bremen, and since 2011 he has been responsible for business development at the offshore helicopter service Wiking Helikopter Service, where he has served as business manager since June 2011.



Dr Matthias Ruppert is director of medicine for ADAC's air rescue operations. Until 2007, he was at the University of Munich's Klinikum, in surgery and anaesthesiology, and at the affiliated Institute of Emergency Medicine and Medicine Management. He is an anaesthetist and emergency physician with many years of experience in mountain and hoist rescue operations. He is qualified to act as medical director of rescue services and senior emergency physician, and he is also an expert on patient safety, training and simulation, and 'human factors'.

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42 Offshore Vessel Control Center (OVCC): From maritime surveillance to the deployment of ships and logistics coordination

Bugsier-, Reederei- und Bergungs-Gesellschaft, Project Head, Carsten Wibel
Carsten Wibel was active as technical officer on container, bulk and special ships for 15 seagoing years, most recently on the Oceanic, an ocean-going tug belonging to the Bugsier-, Reedereiund Bergungs-Gesellschaft. During this period he also completed studies for a graduate degree in ship operation engineering. After two years of R & D in ship safety and environmental protection he moved in 2000 into organising operations from land. As project manager he has worked on developing specialised ships such as the Nordic, an emergency tug. In an honorary capacity he also heads the offshore wind energy standards committee.



43 HSE aspects for diving operations in German offshore wind farm projects

GL Garrad Hassan, Offshore Wind Consultant, Justus Kellner

 Project & risk management – Safety concepts for German offshore wind farms Offshore Wind Consultant, GL Garrad Hassan, Hamburg, Germany – (2008 to present) – Project management for the logistics of the research project 'Research at Alpha Ventus' (RAVE) – Platform management and service of the FINO 1 research platform in the North Sea – Layout and management of the wind and meteorological measurements on FINO 3 research platform in the North Sea.



HOCHTIEF has actively participated in the offshore wind market and in pioneering projects since 2001. We are a strong partner for large-scale offshore wind projects.





2 – 5 p.m. **SESSION I** – Offshore Job Qualification





Chair: WAB e.V., Urs Wahl

Urs Wahl joined WAB in October 2011 as project manager for cluster development and energy policy; he is also active in work related to job qualification. He studied political science, international relations, political theory, and psychology at the University of Bremen and the University of Tampere. Urs Wahl previously worked for Thales Instruments as project manager and began his career as assistant to a Member of the European Parliament.



44 Employment potential of the offshore wind energy industry

PricewaterhouseCoopers, Senior Manager, Dr Thomas Ull

Dr Ull, LL.M., is a certified accountant and head of the business unit for family-run and mediumsized businesses at PwC Nordwest, with offices in Bremen and Oldenburg. His clients include almost exclusively market-listed and non-market-listed family businesses. Dr Ull studied business administration and tax law at the University of Osnabrück and received his doctoral degree from the University of Bremen. He is a lecturer at the universities of Bremen and Münster, and the author of numerous publications on IFRS and SMEs, and on accounting law in family businesses.



45 (1) Germany's northwest region focuses on job qualification and vocational training for the offshore wind industry

ForWind – Center for Wind Energy Research, Coordinator for Professional Training and Continuing Studies, Moses Kärn

Moses Kärn is manager of the Professional Training and Continuing Studies section of ForWind at the University of Oldenburg. He is director of studies of the "Continuing Studies Programme Wind Energy and Management" which is in its sixth year of operation, and the "Continuing Studies Programme Offshore Wind Energy" which will start in fall 2012. Additionally, Moses Kärn is the local coordinator for the Erasmus Mundus joint master course "European Wind Energy Master (EWEM)". Moses Kärn received his MSc in Physics (Dipl.-Phys.) in 2002 after studying in Oldenburg and UC San Diego.

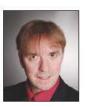


45 (2) Job qualification and advanced training for offshore service technicians

Deutsche WindGuard Offshore, Senior Project Manager, Stefan Hicke

Stefan Hicke began his career as project financer for environmental infrastructure projects after his commercial training and subsequent studies in economics at the University of Witten/Herdecke. In 1999, he became a manager of wind energy funds and the managing director of three mutual funds at an ethical-ecological bank, and in 2008, he became involved in developing and marketing IT solutions for offshore wind farms. Since November 2010, he has been with Deutsche WindGuard Offshore, his work focusing on offshore safety training and operational concepts.





46 (1) HOCHTIEF – Training as an offshore worker at the Global Tech 1 wind farm (Part 1 – HSE training)

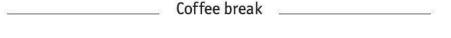
HOCHTIEF Solutions – Civil Engineering Marine and Offshore, QHSE Manager, Dirk Schreiber – Worked in HOCHTIEF SOLUTIONS since May 2011 as QHSE Manager to coordinate all HSE aspects for Marine and Offshore Wind projects – Worked 13 years in the oil industry for Shell in various roles within the areas of HSE, business improvement and cultural change, locally and globally – Worked 6 years at engineering consultancy company as project manager – Holds an university degree in Chemical Engineering and additional qualification as Occupational Safety Specialist (Germany)



46 (2) Technical training programme for installation preparation (Part 2)

HOCHTIEF Solutions, Deputy Project Manager, Michael Berges

Michael Berges gained an engineering degree at the Mainz University of Applied Sciences and a bachelor's degree in civil engineering at the University of Brighton. He began his career in 2007 with Bilfinger Berger Canada, working on a bridge-building project as Site Engineer. From 2009 to 2011, he was at Bilfinger Berger Ingenieurbau as Methods Engineer, doing work preparation and tendering for tunnelling and other civil engineering projects in Germany and Sweden. In 2011 he moved to the Civil Engineering and Marine Works division of HOCHTIEF Solutions, where he is currently Deputy Project Manager for the Global Tech 1 offshore wind farm, at which 80 foundations and wind turbines are being installed.





47 The challenge of internationalisation: Building up a skilled labour pool able to work in different countries

DONG Energy Renewables Germany, Country Manager Engineering, Head of Project Execution, Christoph Mertens

Christoph Mertens was managing director / country manager at Det Norske Veritas (DNV) from 2009 to 2011, and from 2008 to 2009 he was technical director at Atel Spreetal Kraftwerk in Germany. He has also held positions at Vattenfall Europe Nuclear Energy and RWE Power.



48 Developing a competent offshore workforce

Petrofac Training, Business Development Manager, Greg Croft

Greg Croft joined Petrofac Training in October 2005 and became Business Development Manager (Europe) in 2009. As Business Development Manager, Greg is responsible for developing all training opportunities across all of Petrofac Training's service lines, namely, Offshore Survival, Emergency Response, Marine, Specialist Firefighting, H&S and latterly, Renewables. Greg graduated with honours from RGU in Business Management and prior to Petrofac was a stockbroker for Edward Jones.



MONDAY, 25 JUNE 2012

11 a.m. – 5 p.m.

Excursion to Bremerhaven

WINDFORCE 2012 will kick off with an excursion to three destinations in Bremerhaven; participants will get an inside view of the latest developments in Germany's offshore wind industry.

At each destination, representatives of the host company and of the Wind Energy Agency WAB will accompany participants and answer questions. The excursion will begin at and return to the Bremen Fair. Participants must register to join. Simultaneous German/English and English/German translation will be available during the excursion.

* Please note: There will be no access to facilities for persons from competing companies. The company retains the right to make individual decisions in this regard. Thank you for your understanding.



AREVA Wind nacelle test stand*



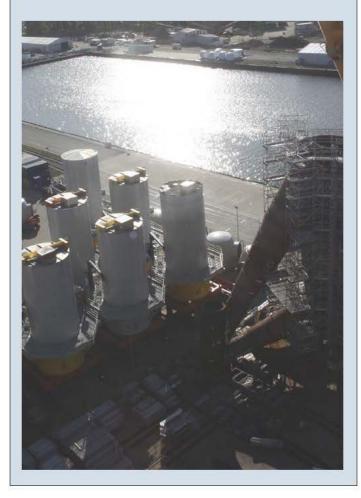






Production of steel foundations at WeserWind GmbH Offshore Construction Georgsmarienhütte*





Visit to RWE Innogy's base and construction port for the Nordsee Ost offshore wind farm*







TUESDAY, 26 JUNE 2012

7 p.m. Senate Reception at Bremen Town Hall/Opening of Conference

Jens Böhrnsen,

Mayor of the Free Hanseatic City of Bremen

Fergus Ewing,

Minister for Energy, Enterprise and Tourism of Scotland

Followed by inaugural event in and around Bremen Town Hall.

The 600-year-old Bremen Town Hall was declared a UNESCO World Heritage Site in 2004.

WEDNESDAY, 27 JUNE 2012

7 p.m. Maritime Wind Dinner

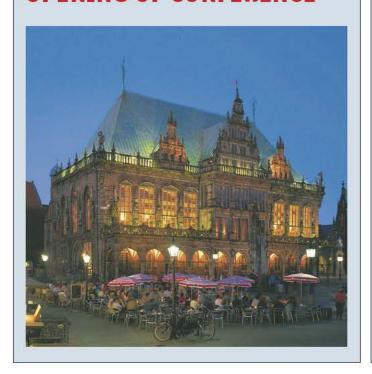
ABC Halbinsel Offshore Terminal in Bremerhaven

In collaboration with: BLG Logistics, bremenports, DLB, WeserWind GmbH

The venue for the 2012 Maritime Wind Dinner is the ABC-Halbinsel in Bremerhaven's Überseehafen port, where BLG LOGISTICS GROUP (Wind Energie Logistics) currently operates an offshore terminal. Foundation structures manufactured in Bremerhaven by WeserWind Offshore Construction Georgsmarinenhütte are stored here before being transported on the construction site. Guests at the 2012 Maritime Wind Dinner will have a firsthand look at some aspects of the logistics process.

Transportation to the venue is in conjunction with: DB Mobility Networks Logistics

OPENING OF CONFERENCE



MARITIME WIND DINNER





6 p.m. Trade Fair Party "Up'n Swutsch"

On the penultimate day of the trade fair and the final day of the conference, there is a special party for exhibitors and conference participants with food, drinks and live music.

Our special guest, Bremen soul singer Flo Mega will serve up a relaxed, casual atmosphere along with the Ruffcats, providing just the right platform for participants to strengthen contacts.





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PricewaterhouseCoopers AG WPG www.pwc.com



WeserWind GmbH
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www.weserwind.de

Conference theme session —



Hardy Schmitz GmbH & CO. KG www.hardy-schmitz.de

Documentation -



Cuxport GmbH www.cuxport.de

Internet Lounge —



ESG Elektroniksystem und Logistik GmbH www.esg.de

Lunch and snack buffets -



J. Müller AG www.jmueller.de



REpower Systems SE www.repower.de

Lanyards —



wpd think energy www.wpd.de

Conference bags -



WeserWind GmbH
Offshore Construction Georgsmarienhütte
www.weserwind.de



Lounge area -

Eurocopter www.eurocopter.com





Vattenfall Windpower www.vattenfall.com

Trade fair bags -



Rhenus Midgard GmbH & Co. KG www.rhenus.de

Lounge opening of conference -



Scottish Development International www.scottishdevelopmentinternational.com

Maritime Wind Dinner -

BLG LOGISTICS

BLG LOGISTICS Group www.blg.de

Name badges -



AMBAU GmbH www.ambau-gmbh.de



Siemens AG www.siemens.com

Participants list -



Marsh GmbH www.marsh.de

Transportation during the conference -



Marsh GmbH www.marsh.de

Water bottles-



HOCHTIEF Solutions AG www.hochtief.de

WINDFORCE quide -

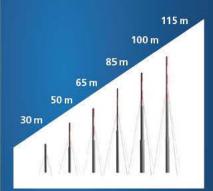


Nordwest Assekuranzmakler GmbH & Co. KG www.nw-assekuranz.de

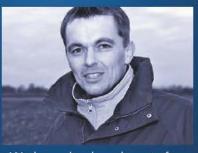
STANDARD HEIGHTS UP TO 115 M SPECIAL CONSTRUCTIONS

WIND MEASURING MASTS

Measuring at hub height



References in whole Europe



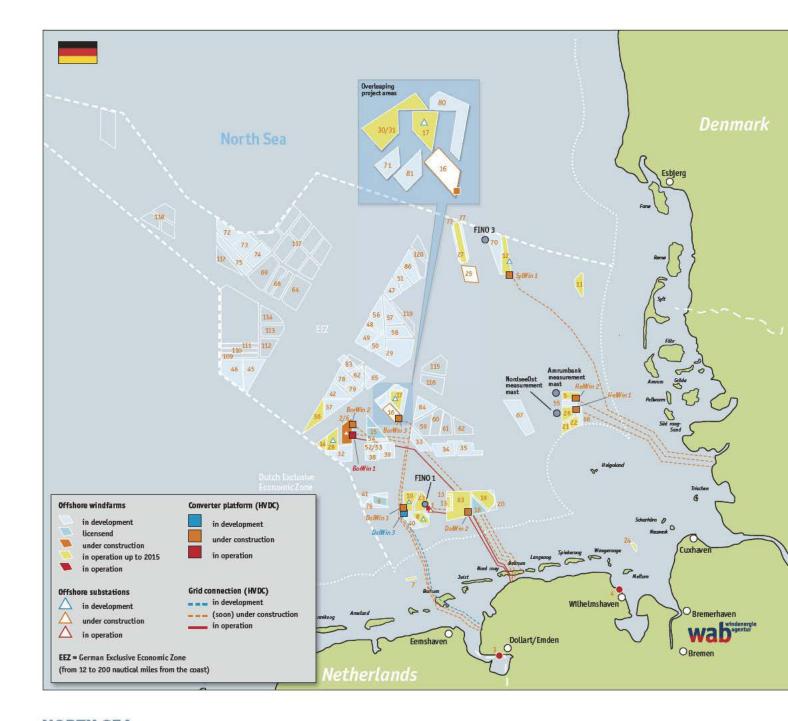
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Ų.	alpha Ventus	20	Gode Wind III	29	Aiolos	49	GAIA III	69	Nemo
2	BARD Offshore 1	21	Meerwind Süd	30	Albatros	50	GAIA IV	70	Nordpassage
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93	Wikinger (ehem. Ventotec Ost 2)

94	Adlergrund 500
95	Adlergrund GAP
96	Adlergrund Nordkap
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98	Arcadis Ost 2
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105	Beltsee
106	Beta Baltic
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108	Windanker

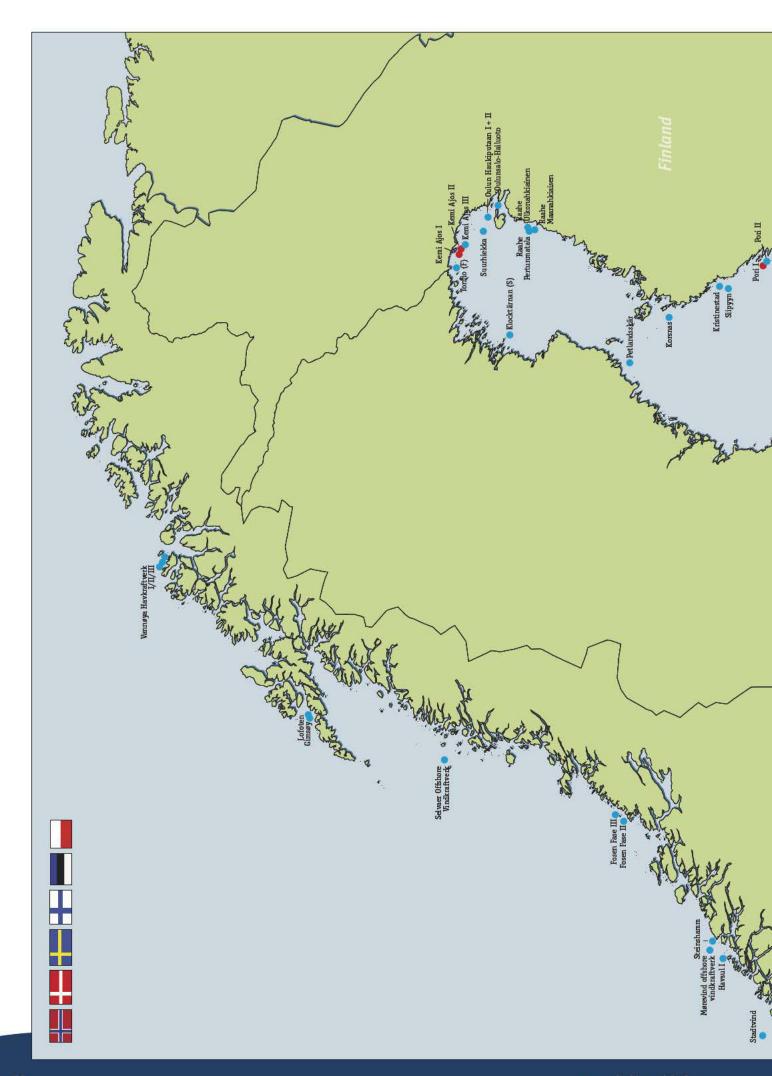


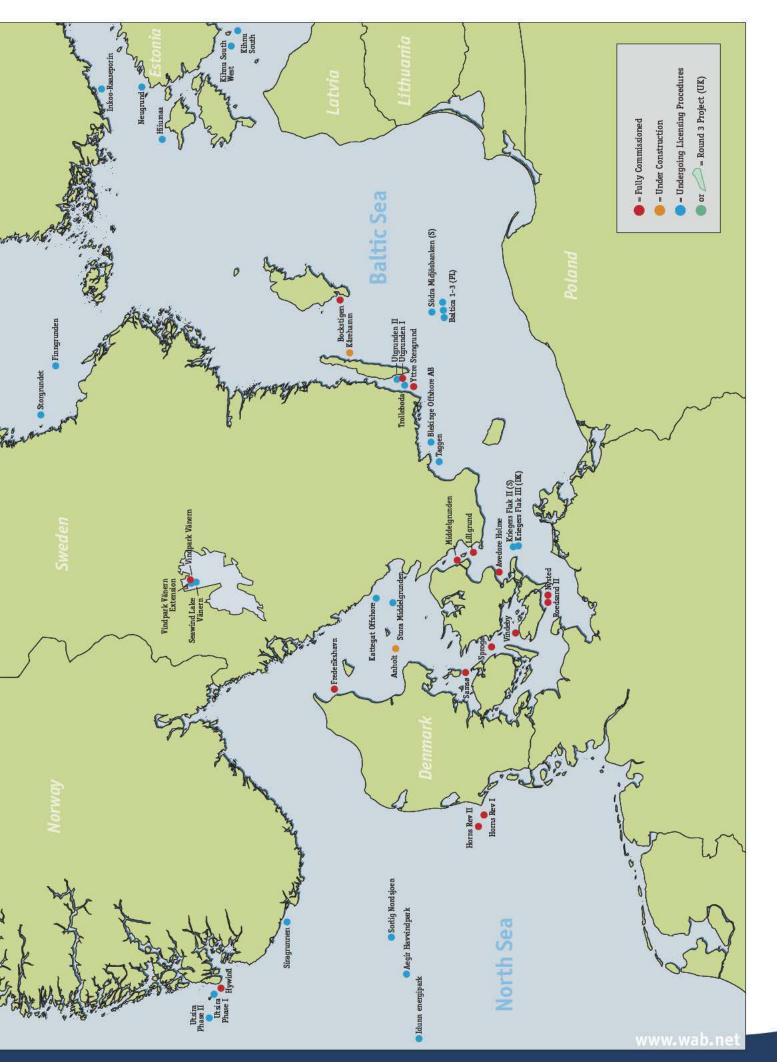
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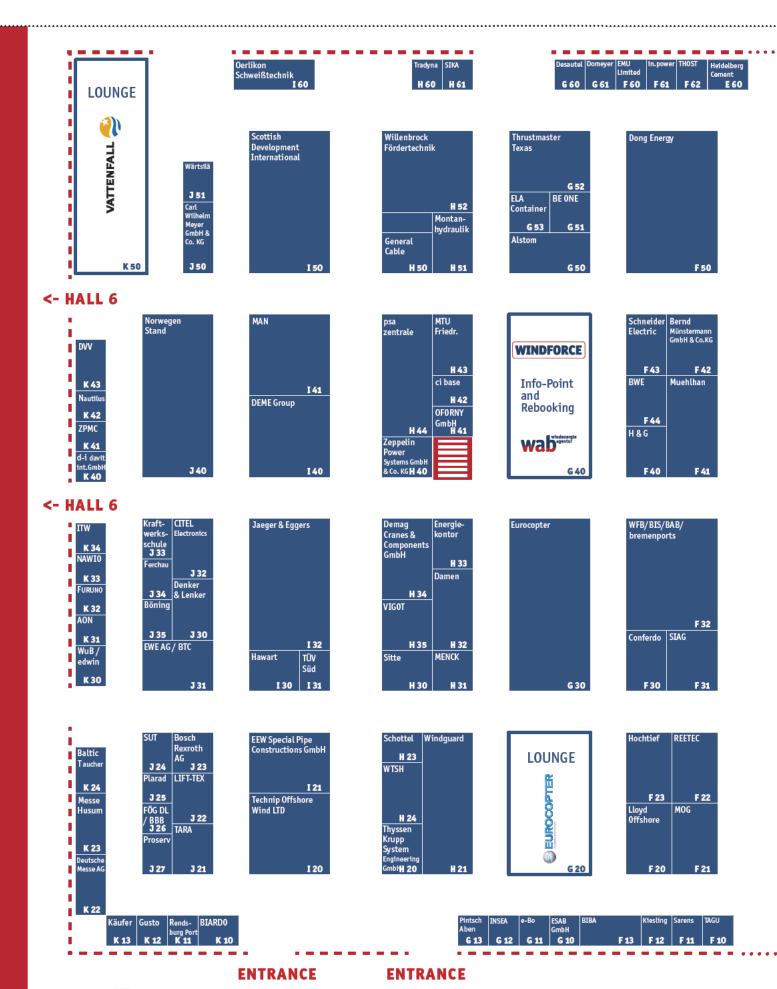




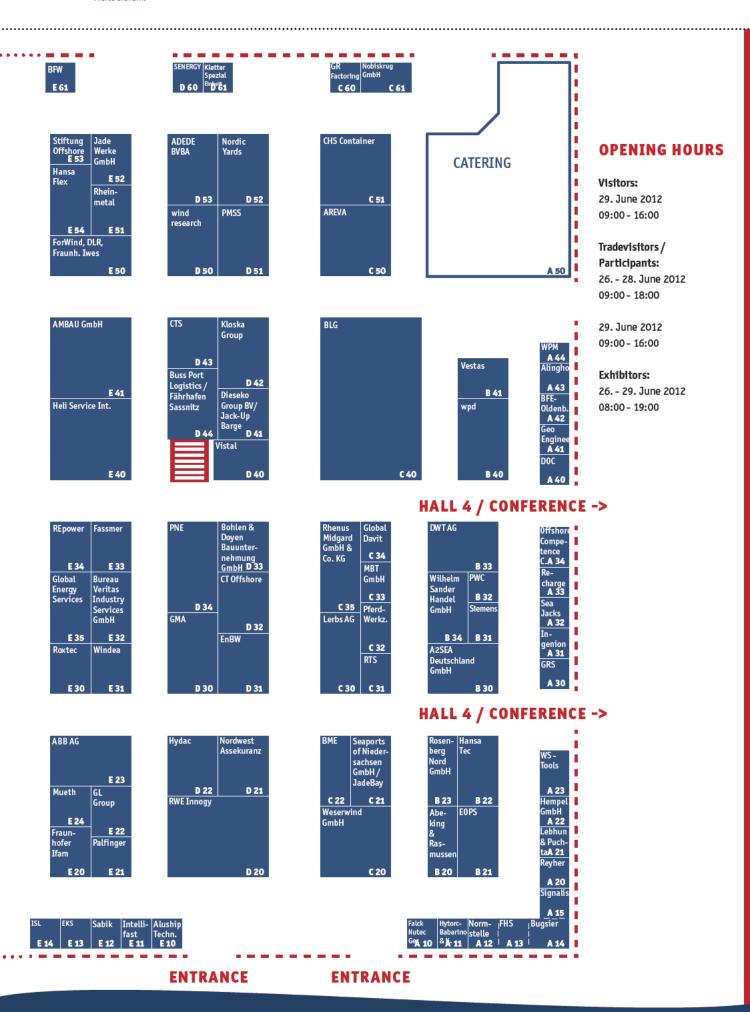


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NASEA - Institute for sustainable activities at sea	
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OffTEC Base GmbH & Co. KGH 24	
DFORNY GMBHH 41	
PSA Zentrale – Dienstleistungen am Seil	
OTC Wind AC	







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3M DEUTSCHLAND GMBH

Carl-Schurz-Str. 1 41453 Neuss, Germany Stefan Laabs Tel +49 2131 14-0

www.3M-Wind.de

A2SEA DEUTSCHLAND GMBH

Alter Wandrahm 15 20457 Hamburg, Germany Martin Huss Tel +49 4041907318 mhu@a2sea.com www.a2sea.com

A2SEA – Powered by knowhow A2SEA offers integrated installation and service solutions for the offshore wind industry. Since 2002, our fleet has installed more than 750 turbines and 340 foundations. Powered by know-how and experience, our project teams complete every installation safely, on time, and to budget.

- ► Constructions and Installation
- ► Logistics and Ports
- ▶ Operation and Maintenance

ABB AG

Kallstadter Str. 1 68309 Mannheim, Germany Alexander Sonneck Tel +49 621 3812321 alexander.sonneck@de.abb.com www.abb.com/windpower

ABB is a reliable partner for the wind industry since 30 years – both as today's biggest independent supplier of electrical components for wind power plants, as well as technology leader in linking offshore wind farms to the grid. The portfolio of ABB for the wind industry ranges from generators, converters and low voltage products over transformers and substations to grid connections and electrical infrastructure projects.

- ► Energy Supply and Grid Operation / Cables
- ► Construction and Installation
- ▶ Operation and Maintenance













ABEKING & RASMUSSEN SCHIFFS-UND YACHTWERFT AG

An der Faehre 2 27809 Lemwerder, Germany Nils Olschner Tel +49 421 6733-0 info@abeking.com www.abeking.com

Abeking & Rasmussen (Lemwerder, Germany) designs, builds and delivers among others offshore service vessels and workboats. Especially their SWATH@A&R technology offers sensational smooth rides especially in high seas. The latest delivery was the 25m Windpark Tender for BARD. The vessel is permanently stationed in the windfarm. Its design derives from the proven pilot tenders and was adapted to the specific needs of the offshore wind industry.

► Ships and Marine Technology

AIRWERK GMBH

Südstr. 4 26897 Esterwegen, Germany Holger Haardt Tel +49 201 12516910 holger.haardt@airwerk.com www.airwerk.com

airwerk GmbH is an internationally active specialist for customized renewable energy projects. Its business unit "airwerk technical solutions" combines expertise, experience and proven technology for the successful planning, equipping and commissioning of offshore measurement towers. This includes offshore measurement solutions such as foundation monitoring, structural analysis and sonar transponders for the detection of underwater obstacles.

- ▶ Operation & Maintenance
- ▶ Research & Development
- ► Construction & Installation

ALINGHO RENEWABLE ENERGY EXPERTS

Reichenbachstr. 16 80469 Munich, Germany Christiane Artmann Tel +49 89 244 119 0 info@alingho.com www.alingho.com

ALINGHO is a recruiting and headhunting firm specialized in renewable energies, sustainability and environmental technologies. We have particularly good references in the offshore wind energy sector. Please get in touch with us to learn more. ALINGHO maintains offices in Munich and Berlin. ALINGHO is member of the German Wind Energy Association (BWE) and the German Solar Energy Association (BSW).

▶ Job Qualification and Personnel















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ALINGHO RENEWABLE ENERGY EXPERTS

Gasometer Schöneberg / EUREF Campus Torgauer Str. 12-15 10829 Berlin, Germany Dr Axel von Perfall Tel +49 30 814 52 92 0 info@alingho.com www.alingho.com

ALINGHO is a recruiting and headhunting firm specialized in renewable energies, sustainability and environmental technologies. We have particularly good references in the offshore wind energy sector. Please get in touch with us to learn more. ALINGHO maintains offices in Munich and Berlin. ALINGHO is member of the German Wind Energy Association (BWE) and the German Solar Energy Association (BSW).

▶ Job Qualification and Personnel

ALL FOR OFFSHORE GMBH

Großer Burstah 44 20457 Hamburg, Germany Oliver Heinecke Tel +49 40 36006658-11 o.heinecke@allforoffshore.de www.allforoffshore.de

All for Offshore stands for a combination of port, transportation and maritime logistics combined with the know-how of offshore wind operation and maintenance. We offer a broad spectrum of all kinds of services necessary for the logistics, planning and the operation of offshore wind energy projects. Hereby, it is possible to minimize time and cost intensive interfaces and to optimize processes by developing concepts for logistics and O&M.

- ▶ Operation and Maintenance
- ► Ships and Marine Technology
- ► Logistics and Ports

ALSTOM GRID GMBH

Gradestr, 36 12347 Berlin, Germany Stefan von Westberg Tel +49 69 6655891166 stefan.von-westberg@alstom.com www.alstom.de

Alstom is a global leader in the world of power generation, power transmission and rail infrastructure and sets the benchmark for innovative and environmentally friendly technologies. Alstom offers a wide range of solutions for power generation and transmission, with a focus on smart grids. The Group employs 92,000 people in around 100 countries. It had sales of €20 billion and booked close to €22 billion in orders in 2011/12.

- ► Energy Supply and Grid Operation / Cables
- ► Turbine Engineering and Construction
- ▶ Operation and Maintenance













ALUSHIP TECHNOLOGY

80-958 Gdansk, Poland Goetz Linzenmeier Tel +48 587 691574 board@aluship.com www.aluship.com

Engineering and construction of windfarm service vessels, Aluminium and secondary steel structures for offshore wind towers and wind turbines, Engineering and construction for windenergy, 0&G offshore and special shipbuilding, Plasma cutting services, lofting, nesting, Arbeitnehmerüberlassung, Welding certificates approved by ABS, DNV, LR, RINA, GL, ISO 9001:2008; DIN 18800, EN 1090-1; EN 3834-2.

- ► Construction and Installation
- ► Ships and Marine Technology
- ▶ Job Qualification and Personnel

AMBAU GMBH

Am Werfttor 22 28755 Bremen, Germany Kai Simon Tel +49 421 62031322 sales@ambau.com www.ambau.com

AMBAU GmbH sees its role as an experienced, competent and reliable manufacturer of towers and foundation structures in the off and onshore wind energy industry. In this, the company upholds the philosophy of participating actively in protecting the environment through the use of innovative and green technologies. Today, AMBAU GmbH operates five production plants and works with a total of 850 employees.

▶ Products/Service off- and onshore

AON VERSICHERUNGSMAKLER DEUTSCH-LAND GMBH

Caffamacherreihe 16 20355 Hamburg, Germany Gemma Avey Tel +49 40 3605-1558 qemma.avey@aon.de www.aon.de

Aon is a global leader in risk management, insurance and reinsurance brokerage, human resources and management consulting, and outsourcing. With 61,000 employees in 500 offices, we integrate customised services, leverage expertise across industries and apply business knowledge to your strategic goals. We are a full service risk management advisor. Our global network of resources provides innovative solutions to client business risks and challenges.

- ► Financing and Insurance
- ► Risk Advisory















AREVA WIND GMBH

Am Sandtorkai 50 20457 Hamburg, Germany Manuela Scheferling Tel +49 40 4321867-106 manuela.scheferling@areva.com www.arevawind.com

AREVA Wind manufactures and designs the M5000 turbine, a field-proven wind energy converter for offshore wind farms. AREVA's M5000 technology is the first 5MW wind energy converter exclusively designed for offshore conditions therefore guarantying highest reliability levels. AREVA Wind is a subsidiary of the AREVA group.

► Offshore Wind turbine manufacturer

BALTIC TAUCHEREI- UND BERGUNGS-BETRIEB ROSTOCK GMBH

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Alter Hafen Süd 3 18069 Rostock, Germany Katrin Thörner Tel +49 381 8111000 katrin@baltic-taucher.de www.baltic-taucher.de

Baltic Diver Germany is a reputable maritime service provider. We can look back on almost 20 years with international and challenging offshore projects in 23 countries. We can offer a wide range of services e.g.: Commercial diving works, explosive ordnance disposal, salvage and average service, oil spill removal, hydraulic engineering and coastal protection, sea cable laying and recovery, vessel service and repair, personnel service, ROV and sonar operations.

- ► Construction and Installation
- ► Ships and Marine Technology
- ▶ Operation and Maintenance

BEONE HAMBURG GMBH

Harburger Schloßstr. 30 21079 Hamburg, Germany Fabian Kia Tel +49 40 79416600 fabian.kia@beone-hamburg.com www.beone-hamburg.com

BeOne Hamburg is focusing on management and technology solutions. Besides activities in aerospace and the automotive, we concentrate on the on- and offshore wind sector. The growing numbers of offshore wind parks demand higher investments and a need for a professional quality, risk, process and project management. We help you to industrialise your production, logistic and administration processes. For our wind study, please approach booth G51.

- ▶ Project Planning
- ▶ Research and Development
- ▶ Information and Customer Service













BERND MÜNSTERMANN GMBH & CO. KG

Lengericher Str. 22 48291 Telgte, Germany Roland Fischer Tel +49 2504 9800-750 roland.fischer@muenstermann.com www.muenstermann.com

We are the true experts in industrial dryers and thermoprocessing plants, sophisticated handling technology and top quality dedusting, exhaust extraction and filter systems. For the offshore industrie we specialised on dryers for carbon parts and even more on turntables or carousels used for the production of heavy cables.

- ▶ Design and production of special plants and components
- ► Ships and Marine Technology
- ► Energy Supply and Grid Operation / Cables

BFW - UNTERNEHMEN FÜR BILDUNG BILDUNGS- UND TRAININGSZENTRUM FÜR WINDENERGIETECHNIK

Knurrhahnstraße 25 - 27 27572 Bremerhaven, Germany Uwe Voigt Tel +49 471 3097327 voigt.uwe@windzentrum.de www.windzentrum.de

Since 2003 bfw has trained skilled personnel in the training centres for windforce in Bremen and Bremerhaven. Due to the amalgamation of the training centres in Bremerhaven bfw is now in the position to offer the trainings for skilled personnel in the complete workflow from rotor-blade-production, production, installation of wind turbines onshore and offshore as well as service of wind turbines at one place in high quality.

▶ Job Qualification and Personnel

BIARDO SURVIVAL SUITS B.V.

De Trompet 2800 1967 DD Heemskerk, The Netherlands F.J. Meeuwissen Tel +31 251 241256 info@biardo.nl www.biardo.nl

Biardo survival suits bv, supplies, rent out and maintains for many years Helicopter Transportation Suits, survival suits, lifejackets with and without Rebreather system and Personal Locator Beacons. Our products are used by: Oil companies with offshore locations, Helicopter companies, Loodswezen, Offshore Wind Parks etc.. For information on Purchasing, renting or maintenance please visit www.biardo.nl

▶ Operation and Maintenance







Bremerhavener Gesellschaft für Investitionsförderung und Stadtentwicklung mbH





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BIBA - BREMER INSTITUT FÜR PRODUKTION UND LOGISTIK GMBH

Hochschulring 20 28359 Bremen, Germany Marco Lewandowski Tel +49 421 21850122 lew@biba.uni-bremen.de www.biba.uni-bremen.de

BIBA – Bremen Institut für Produktion und Logistik GmbH is a scientific engineering research institute dealing with the issues of production and logistics systems. BIBA keeps an eye on the whole supply chain and the entire product life cycle: from the idea to the product, its draft, production and usage to its reutilisation and further use. In this context we work on future issues in production, logistics and operation of wind turbines.

- ► Research and Development
- ► Logistics and Ports
- ▶ Operation and Maintenance

BIS ECONOMIC DEVELOPMENT COMPANY LTD.

Am Alten Hafen 118 27568 Bremerhaven, Germany Nils Schnorrenberger Tel +49 471 94646 600 schnorrenberger@bis-bremerhaven.de www.offshore-windport.de

Bremerhaven. Home port for offshore wind energy. BIS is the economic development company in the city of Bremerhaven. We offer you one-stop business support services, industrial sites close to the deepwater, support by research and development institutions such as the Fraunhofer Institute for Wind Energy, a strong regional network of producers, suppliers, logistics and service providers all along the value-added chain and a qualified workforce.

- ► Information and Customer Service
- ► Logistics and Ports

BLANKE MEIER EVERS

Kurfürstenallee 23 28211 Bremen, Germany Mareile Heineke Tel +49 421 9494686 m.heineke@bme-law.de www.bme-law.de

Blanke Meier Evers gives advice in the field of renewable energies, in particular wind farm projects on- and offshore including repowering. The law firm offers the full range of legal services in connection with renewable energies projects. This specifically concerns energy law, project finance, corporate finance, company law, tax law, contract law and public law. The company's clients include developers, banks, investors and public entities.

▶ Information and Customer Service













BLG LOGISTICS GROUP AG & CO. KG

Präsident-Kennedy-Platz 1 28203 Bremen, Germany Jessica Jobmann Tel +49 421 3982529 WindEnergyLogistics@blg.de www.blg.de

BLG develops customized logistics systems to manage and operate the supply chain of wind farms – from procurement to production and installation at sea. The company combines its expertise in industrial and production logistics with decades of experience in seaport cargo handling and transfers this know-how to the wind industry. BLG WindEnergy Logistics not only offers in-depth process analysis, but also carries operational responsibility. BLG is a reliable partner for the industry, with strong investment credentials.

► Logistics and Ports

BOHLEN & DOYEN BAUUNTERNEHMUNG GMBH

Hauptstr. 248 26639 Wiesmoor, Germany Tel +49 4944 301-0 info@bohlen-doyen.com www.bohlen-doyen.com

Offshore service and subsea cable laying. In offshore wind farms, wind power systems and transmission grids all related electrical components have to be maintained and serviced on a regular basis. Bohlen & Doyen in close cooperation with his parent company SAG offers a wide range of services in this area.

- ► Energy Supply and Grid Operation / Cables
- Department of the Operation and Maintenance
- ► Construction and Installation

BÖNING AUTOMATIONSTECHNOLOGIE GMBH & CO. KG

Am Steenöver 4 27777 Ganderkesee, Germany Eva Riquarts Tel +49 4221 9475-156 eva.riquarts@boening.com www.boening.com

Böning develops and manufactures systems for use on commercial vessels and yachts. This includes monitoring and control systems for diesel engines, generators, pumps, valves, navigation lights and thrusters up to integrated bridges. For applications on board yachts, we offer door monitoring as well as control systems for trim tabs, searchlights and cameras. All systems can be customized to your requirements (also as classified solution).

► Ships and Marine Technology















BOSCH REXROTH AG

Ulmer Str. 4 30880 Laatzen, Germany Carsten Greiner Tel +49 511 2136-251 marinesales@boschrexroth.de www.boschrexroth.com

Bosch Rexroth AG is one of the world's leading specialists in the field of drive and control technologies. The Rexroth company supplies more than 500,000 customers with tailored solutions for driving, controlling, and moving. Bosch Rexroth is a partner for Mobile Applications, Machinery Applications and Engineering, Factory Automation and Renewable Energies.

- ► Ships and Marine Technology
- ► Turbine Engineering and Construction

BREMENPORTS GMBH & CO. KG

Am Strom 2 27568 Bremerhaven, Germany Stefan Färber Tel +49 471 30901-0 marketing@bremenports.de www.bremenports.de

Engineering ServicesPlanning and implementation . Overall port planning, strategy and project managementInspections and recommendations . Planning maintenance work and intervalsEnvironment ManagementEconomy and ecology . Environmental impact assessmentsSpecialist expertise • Planning and implementation of approval procedures for major infrastructure projectsCompensation measures . Planning and execution of measures to compensate for new port areas

- ▶ Logistics and Ports
- ▶ Project Planning
- ▶ Information and Customer Service

BREMER AUFBAU-BANK GMBH

Langenstr. 2-4 28195 Bremen, Germany Ansgar Wilhelm Tel +49 421 9600-419 ansgar.wilhelm@bab-bremen.de www.bab-bremen.de

The Bremer Aufbau-Bank GmbH (BAB) is the economic development bank of the state of Bremen (Bremen and Bremerhaven). The BAB ist subsidiary of the WFB Wirtschaftsförderung Bremen GmbH.

► Financing and Insurance













BTC BUSINESS TECHNOLOGY CONSULTING AG

Escherweg 5 26121 Oldenburg, Germany Joachim Klinke Tel +49 441 3612-2327 joachim.klinke@btc-aq.com www.btc-ag.com

The BTC Group is one of the leading IT-Consulting companies in Germany, which is able to cover the entire supply chain within the energy sector. BTC works together with SAP AG as a systems house, channel partner, hosting partner and service partner. The combination of SAP expertise with the specialisation in geographic information systems and the experience in grid control system with its own software product BTC PRINS® is unique.

- ► Energy Supply and Grid Operation / Cables
- ► Research and Development
- ▶ Operation and Maintenance

BUGSIER-, REEDEREI- UND BERGUNGS-GESELLSCHAFT MBH & CO. KG

Johannisbollwerk 10 20459 Hamburg, Germany Sven Schröder Tel +49 40 31111104 s.schroeder@bugsier.de www.bugsier.de

As one of Germany's leading marine contractors BUGSIER offers highly skilled personnel with vast offshore experience and state-ofthe art equipment throughout the North- and Baltic Sea. We operate a highly versatile fleet of 35 vessels suitable for the logistical support of construction and operation of your offshore project. The Wind Energy Department offers offshore engineering consultancy based on BUGSIER's rich 145 year track

- ▶ Operation of specialized offshore vessels
- ► Port- & OffshoreTowage
- ▶ Offshore Advisory

BUNDESTECHNOLOGIEZENTRUM FÜR **ELEKTRO- UND INFORMATIONSTECHNIK**

Donnerschweer Str. 184 26123 Oldenburg, Germany Dirk Maske Tel +49 441 34092-164 d.maske@bfe.de www.bfe.de

BFE-Oldenburg (Federal technology center for electrical and information technology) is the first address in additional education in northern Germany. Especially for service technicians on wind power plants, we developed a course that covers fundamental knowledge. BFE-Oldenburg has perfectly equipped modern laboratories. Whether you are an electrician, a skilled worker or a master craftsman, we have custom-made offers for your career progress.

- ▶ Job Qualification and Personnel
- ▶ Information and Customer Service















BUREAU VERITAS INDUSTRY SERVICES GMBH

Veritaskai 1 21079 Hamburg, Germany Michael Dahm Tel+49 40 236250 marketing@de.bureauveritas.com www.bureauveritas.de/wind

Bureau Veritas is a world leader in conformity assessment and certification services and offers in the field of wind energy comprehensive, customized services for manufacturer, utilities, investors, operators and project developers. The portfolio contains certification of wind turbines and wind farm projects, shop inspection and expediting, building supervision, inspection of wind turbines as well as due diligence.

- ▶ Project Planning
- ► Construction and Installation
- ▶ Operation and Maintenance

BURNTISLAND FABRICATIONS LTD

Seaforth PlaceWest Shore KY3 9AU Burntisland, United Kingdom John Robertson Tel +44 1592 222 000 johnr@bifab.co.uk www.bifab.co.uk

Burntisland Fabrications Ltd was formed in March 2001 following a management buyout when it began using its knowledge of the Oil and Gas market to diversify into Renewables. It has since developed into Scotland's largest fabrication company with the three fabrications yards the company has become one of the leading suppliers of support structures for for offshore wind turbines in Europe.

BUSS PORT LOGISTICS GMBH & CO. KG

Am Sandtorkai 48 20457 Hamburg, Germany Heinrich Ahlers Tel +49 40 3198-1270 H.Ahlers@buss-group.de www.buss-ports.de

Buss Port Logistics operates nine multipurpose terminals for containers, breakbulk and project cargo/offshore logistics. Our terminals on the North Sea and the Baltic Sea specialize in meeting the needs of the offshore industry. We offer tailor-made logistic solutions and one-stop port services including cargo handling, forwarding and warehousing, export packaging, stevedoring, lashing and securing.

▶ Logistics and Ports













CHS CONTAINER HANDEL GMBH

Tillmannstr. 19
28239 Bremen, Germany
Arndt Overbeck
Tel +49 421 6439615
arndt.overbeck@chs-container.de
www.chs-container.de

CHS CONTAINER Handel GmbH was founded in Bremen in 1986. As one of the largest firms in the branch, the company is involved in the trading and rental of containers and room units.

- ► Logistics and Ports
- ► Construction and Installation
- ▶ Operation and Maintenance

CHS SPEZIALCONTAINER -SHELTER AND ENGINEERING GMBH

Tillmannstr. 11 28239 Bremen, Germany Frank Husfeld Tel +49 421 64396 313 frank.husfeld@chs-spezialcontainer.de www.chs-spezialcontainer.de

SPEZIALCONTAINER – Shelter and Engineering GmbH, founded in 2004, has specialised in the development, design and production of special containers. Both CHS companies are certified by Germanischer Lloyd and Bureau Veritas and to DIN ISO 9001:2008 and 14001:2005.

CI-BASE SOFTWARE GMBH

Robert-Hooke-Str. 6 28359 Bremen, Germany Andreas Petersen Tel +49 421 46037770 a.petersen@ci-base.de www.ci-base.de

ci-base Software has been providing specialized PLM and CAD/CAM/CAE services to companies in the mechanical engineering, plant construction, automobile and aviation industries and also for the solution virtual reality (VR). The ci-base team is comprised of dedicated individuals with deep industry knowledge, experience and expertise. The company provides a full range of services, including consulting, implementation, training and support.

- ▶ Research and Development
- ► Turbine Engineering and Construction
- ▶ Operation and Maintenance















CITEL ELECTRONICS GMBH

Alleestr. 144 44793 Bochum, Germany Alain Ruen Tel+49 234 54721-0 info@citel.de www.citel.de

CITEL is the specialist in development, production and marketing of lightning and overvoltage protection and obstruction lightning. Providing security and building trust has been the foundation of our collaboration with our customers for 75 years. Thanks to a range of practice-oriented services, fast delivery and a good cost-performance ratio, we are able to provide our customers with optimal products today and to do it well into the future.

- ► Construction and Installation
- ► Energy Supply and Grid Operation / Cables
- ▶ Turbine Engineering and Construction

CONFERDO GMBH & CO. KG

Südstr. 4 26897 Esterwegen, Germany Andreas Pflügge Tel.+49 5955 205760 apfluegge@conferdo.de www.conferdo.de

Construction, manufacturing and installation of steel structures for wind energy technology, on- and offshore: Met Masts, secondary steel, platforms, heli decks, handling structures, boatlanding systems, welding components, nacelles, towers. Development, prototyping, serial production. Approved and certified partner for difficult and ambitious projects.

- ► Construction and Installation
- ▶ Turbine Engineering and Construction

CT OFFSHORE

Norgekaj 62 5000 Odense, Denmark Lise Andersen Tel +45 64872726 la@ctoffshore.dk www.ctoffshore.dk

CT Offshore A/S was founded in 2003 and has developed raptly over the years, transformed itself into a highly rated installation company, with A2SEA as a majority shareholder. CT Offshore provides a full range of offshore services from cable installation to monitoring and maintenance. We will bring our extensive experience, technological precision and professional approach to every single job we do. Our references speak for themselves.

- ► Energy Supply and Grid Operation / Cables
- ▶ Operation and Maintenance
- Project Planning













CTS COMPOSITE TECHNOLOGIE SYSTEME GMBH

Mercatorstr. 43 21502 Geesthacht, Germany Thomas Koch Tel+49 4152 8885 37 thomas.koch@ctscom.de www.ctscom.de

CTS Composite is a leading European systems provider specializedin composites GRP. Our many years of experience in materials and application technology, the machining, assembly of profiles, grating systems form the basis of our successful collaboration with customers. Together with our customers we find solutions for problems. Portfolio: gratings, profiles, construction, laminates, service and maintenance.

- ► Construction and Installation
- ▶ Ships and Marine Technology
- ▶ Operation and Maintenance

DAMEN SHIPYARDS

Avelingen West 20 4202 MS Gorinchem, The Netherlands Maaike Bosma Tel+31 183 639997 mbos@damen.nl www.damen.com

Damen Offshore Wind Damen operates more than 38 shipyards worldwide. Standardized designs and maintaining vessels in stock lead to consistent quality and short delivery times. Research, proven technology and reliable performance enable Damen to offer customers innovative vessels with great Total Cost of Ownership. Damen offers an integrated range of Offshore Wind Vessels to support energy companies and offshore contractors in a wind farm's lifecycle.

- ▶ Shipbuilding
- ► Shiprepair
- ▶ Research and Development

DEME GROUP

Haven 1025 - Scheldedijk 30 2070 Zwijndrecht, Belgium Margot Vyt Tel +32 3 210 6798 info@deme.be www.deme.be

DEME is a diversified group with activities ranging from dredging, reclamation and port construction to soil remediation, silt recycling, support for the oil & gas industry, offshore operations, geotechnical surveys, and assembling, installation and maintenance of offshore wind turbine farms. DEME is represented at this exhibition Nordsee, GeoSea und Scaldis.

- ▶ Project Planning
- ► Construction and Installation
- ► Ships and Marine Technology

















DESAUTEL GMBH

Lebacher Str. 4 66113 Saarbrücken, Germany Peter Sacher Tel +49 3641 609464 info@desautel.de www.desautel.de

DESAUTEL SAS, a French independant family-owned business, has been developing fire-protection products, systems and related services for more than 80 years and deploying them throughout more than 50 countries. More recently, Desautel has been applying their 30 years of experience in the offshore oil industry to the new demands and challenges of the offshore wind power industry.

- ▶ firefighting equipment
- ► Ships and Marine Technology
- Operation and Maintenance, **Information and Customer Service**

DEUTSCHE MESSE AG

Messegelände 30521 Hannover, Germany **Hubertus von Monschaw** Tel +49 511 89-0 renewables@messe.de www.hannovermesse.de/wind

Every other year in the odd years, Wind the Leading Trade Fair for Wind Generation Technology, Components and Services-in Hannover, as an integral part of HANNOVER MESSE, the world's largest and most comprehensive showcase for industrial technology. Wind takes place alongside its sister shows Energy and MDA so huge interest is guaranteed on the part of attendees with backgrounds in energy management, industry, government and the public sector at large.

DEUTSCHE OFFSHORE CONSULT GMBH

Fahrenheitstr. 11 28359 Bremen, Germany Sonja Puncken-Kassen Tel +49 471 95846610 spuncken-kassen@deutscheoffshore.de www.deutscheoffshore.de

DOC provides operational and project management expertise within the offshore wind sector. Offices in Bremen and Bremerhaven were carefully selected, placing us in the center of German offshore activity. Offshore experts with decades of experience were recruited, establishing DOC as reliable and experienced partner for permitting, development and implementation of offshore projects.

- ► Construction and Installation
- ► Logistics and Ports
- ▶ Ships and Marine Technology













DEUTSCHE WINDGUARD OFFSHORE GMBH

Oldenburger Str. 65 26316 Varel, Germany Cornelia Jaeger Tel +49 4451 9515 240 c.jaeger@windguard.de www.windquard.com

Deutsche WindGuard is a leading consulting company in the wind energy industry with 100 employees. Headquartered in Varel, Germany, it is a fast growing international company providing a broad range of engineering services in all areas of wind energy: from site assessment to the complete surveying of wind turbines for on and offshore. In addition, Deutsche WindGuard offers tailormade safety training courses for offshore wind personnel.

- ► Project Planning
- ▶ Job Qualification and Personnel
- ▶ Operation & Maintenance

DEUTSCHE WINDTECHNIK AG

Hüttenstr. 20 a 28237 Bremen, Germany Matthias Brandt Tel +49 421 989 610 0 info@deutsche-windtechnik.de www.deutsche-windtechnik.de

Complete Technical Servicing for Wind TurbinesDeutsche Windtechnik is the leading provider for manufacturer-independent service for wind turbines in Germany. With its varied priority areas it offers the entire range of services necessary for the technical maintenance of wind turbines (Servicing - in particular Vestas®, NEG Micon®, SIEMENS®, AN BONUS® -, rotors, towers, foundations, transformer stations, repowering, control, safety).

Operation and Maintenance

D-I DAVIT INTERNATIONAL GMBH

Sandstr. 20 27232 Sulingen, Germany Ulrich Stabenow Tel +49 4271 9327-0 sales@davit-international.de www.davit-international.de

The life saving equipment specialist d-i davit international gmbh is one of the major designers and manufacturers of davit systems and cranes worldwide. d-i davit international is supplier of life-saving equipment, lifting appliances and complete life-saving packages for the civil, commercial, military and special shipbuilding. The company is located in Sulingen in North-West Germany and is assisted by an international network of agencies and service centers.

► Ships and Marine Technology







DIESEKO GROUP











DIESEKO GROUP BV

Lelystraat 49 3364 AH Sliedrecht, The Netherlands Herald Wattenberg Tel +31 184 410 333 H.Wattenberg@diesekogroup.com www.pve-holland.com

Dieseko Group is specialized in offshore and onshore engineering, manufacturing, rental and sales of piling and vibro equipment and power units. Our partners are specialized in complementary products and provide expert knowledge in their field of operation. These joint forces provide one stop shopping for all heavy equipment and services: PVE CRANES & SERVICES, JACK-UP BARGE and WORLD WIDE EQUIPMENT. Working with the Dieseko Group means teaming with passionate professionals.

- ► Construction and Installation
- ► Ships and Marine Technology
- ► Research and Development

DOMEYER GMBH & CO. KG

Konsul-Smidt Str. 15 28217 Bremen, Germany Volker Thomas, Dennis Stockhaus Tel +49 421 37788-38 dennis.stockhaus@domeyer.eu volker.thomas@domeyer.eu www.domeyer.eu

Domeyer GmbH & Co. KG offers complete fire prevention and safety solutions for fire and rescue services, industrial firms, shipping lines and ship yards. The scope of supply ranges from personal protective equipment, breathing systems, portable and stationary fire ext. and alarm systems to commercial diving equipment and high pressure breathing gas compressor systems. All products we sell can be serviced by our specialized service technicians.

- ▶ Ships and Marine Technology
- ► Information and Customer Service
- ▶ Project Planning

E-BO ENTERPRISES

Ter Waarde 63 8900 Ieper, Belgium Christophe Dhaene Tel +32 485 618390 christophe.dhaene@ebo-enterprises.com www.ebo-enterprises.com

e-BO Enterprises is active in network and security solutions for offshore windmillparks. The proposed solution has a scalable architecture covering the following topics: onshore and offshore network design, internal and external security, network services for all involved parties, high available server platform, secured remote access control for suppliers, control room equipment, monitoring system for network, security and server platforms.

- Operation and Maintenance
- ▶ Information and Customer Service













EEW SPECIAL PIPE CONSTRUCTIONS GMBH

Ost-West-Str. 12 18147 Rostock, Germany Nadine Tetzlaff Tel +49 381 81716-115 info@eewspc.de www.eewspc.de

EEW Special Pipe Constructions GmbH is engaged in the production of thick-walled, heavy steel pipes as well as the appropriate pipe components.

► Construction and Installation

ELA CONTAINER GMBH

Zeppelinstr. 19-21 49733 Haren, Germany Hans Gatzemeier Tel +49 5932 5060 info@container.de www.container.de

In addition to office, residential, sleeping, changing room and sanitation containers, you will also find a wide selection of storage and workshop containers at ELA. But also in the offshore business, ELA is your specialist when it comes to accommodation at sea. Whether renting or buying, new or used - mobile spaces from ELAare needed in every industry. Fully equipped, delivered, and installed, ELA containers are ready for immediate use.

- ► Logistics and Ports
- ► Construction and Installation
- ► Ships and Marine Technology

EMU LIMITED

1 Mill Court, The Sawmills, Durley SO32 2EJ Southampton, United Kingdom Rachel Bowes Tel +44 1489 860050 marketing@emulimted.com www.emulimited.com

EMU Limited is a marine consultancy and survey specialist, providing worldwide services in support of infrastructure planning, consenting and development, environmental protection and resource management. Our services are underpinned by well established health & safety and quality systems including UKAS ISO17025 and ISO 9001:2008 accreditation.

- ▶ Project Planning
- ► Research and Develpoment











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ENBW ERNEUERBARE ENERGIEN GMBH

Kronenstr. 26 70173 Stuttgart, Germany Monika Nordhoff Tel +49 711 128 00 renewables@enbw.com www.enbw.com/eee

EnBW Erneuerbare Energien GmbH is consequentially developing the area of offshore and onshore wind energy. Our four large offshore wind farms in the North and Baltic Sea with a total of 1.200 MW belong to the most important wind energy projects in Germany at present. We have taken EnBW Baltic 1, as the first commercial offshore wind farm in Germany, into operation in 2011. EnBW Baltic 2 will be built from 2013 with 288 MW.

- ▶ Project Planning
- ► Research and Development

ENERGIEKONTOR AG OCEAN WIND OFFSHORE

Mary-Somerville-Str. 3 28359 Bremen, Germany Frank Hagemeister Tel +49 421 79306600 Frank.Hagemeister@energiekontor-oceanwind.de www.energiekontor-oceanwind.de

Energiekontor AG is engaged in the entire process involved in successfully building a wind farm - from site acquisition, through project development and financing, to operational management. This offers a maximum degree of security to you as an investor.

▶ Project Planning

ENTEC GMBH

Schellerdamm 16 21079 Hamburg, Germany Marco Schmidt Tel +49 40 28417570 marco.schmidt@entec-industrial.de www.entec-industrial.de

EnTec Industrial Services, Cuxhaven, is introducing a fully operational supply base for your projects in the eastern northsea area. Using a highly effective container based logistic concept we are able to provide you a scalable material management solution on a 24/7 basis. Combined with powerful handling equipment and an ideal location we offer you all the services you need with the commitment to fulfill the highest standards - certified.

- ► Logistics and Ports
- ► Construction and Installation
- ► Landbase supply













EOPS - EVERS OFFSHORE PROJECT SERVICE GMBH

Riedemannstr. 1 27572 Bremerhaven, Germany Stefan Evers Tel +49 471 80931-151 se@eops.eu www.eops.eu

Multi-Service Provider for Offshore Power Projects. We offer a verity of services: Project Management, Facility Management, Helicopter Coordination, Service Coordination, Media Coordination. The EOPS Teammembers gained experienced at the following Offshore Projects: Windmessmast Amrumbank West, alpha ventus, Walney, BARD Offshore 1, EnBW Baltic 1, EnBW Baltic 2, EnBW Hohe See, EnBW He Dreiht, Global Tech 1, Meerwind Süd / Ost

- ► Construction and Installation
- ► Logistics and Ports
- ▶ Operation and Maintenance

ESAB GMBH

Friedrich-Wilhelm-Str. 41 42655 Solingen, Germany Klaus Hoops Tel +49 163 8877128 klaus.hoops@esab.de www.esab.com

More than 100 years of continous research, development and manufacture have made ESAB a word leader in welding, cutting and also an international supplier of products, know-how and services.

- ► Construction and Installation
- ▶ Turbine Engineering and Construction
- ▶ Research and Development

EUROCOPTER

Industriestr. 7 86609 Donauwoerth, Germany Dennis Bernitz Tel +49 906 713635 dennis.bernitz@eurocopter.com www.eurocopter.com

Established in 1992, the Franco-German-Spanish Eurocopter Group is a division of EADS, a world leader in aerospace and defense-related services. The Eurocopter Group employs approximately 20,000 people. In 2011, Eurocopter confirmed its position as the world's number one helicopter manufacturer with a turnover of 5.4 billion Euros, orders for 457 new helicopters and a 43 percent market share in the civil and parapublic sectors.

- ▶ Operation and Maintenance
- ► Logistics and Ports
- ► Construction and Installation



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EWE ENERGIE AG

Tirpitzstr. 39
26122 Oldenburg, Germany
Anne Sahm
Tel +49 441 8034151
Anne.Sahm@ewe.de
www.ewe.de

EWE ENERGIE AG, based in Oldenburg, is a modern energy services provider. The company supplies its customers with reliable and cost-effective energy. Its range of products and services includes eco-power, biogas and energy services such as the planning, installation and operation of central heating systems. EWE is also involved in the field of renewable energies. As lead company, EWE has a share in Germany's first offshore wind farm, alpha ventus.

► Energy Supply and Grid Operation

F. REYHER NCHFG. GMBH & CO. KG

Haferweg 1 22769 Hamburg, Germany Jan Reise Tel +49 40 85363 wind@reyher.de www.reyher.de

For over 25 years Reyher supports manufacturers of wind energy plants and its suppliers with fasteners and fixing technology for gears, base of the tower, rotor and the nacelle. Required quantities sorted and customeroriented logistic concepts for manufacturing and wind turbine erection make Reyher an reliable partner in the field of wind energy. The customer can rely on the high expertise and the deep know-how of the experienced wind energy experts.

▶ Supplier for fasteners and fixing technology

FALCK NUTEC GERMANY

Am Handelshafen 8 27570 Bremerhaven, Germany Mario-C. Largana-Domberg Tel +49 471 48343613 md@falcknutec.de www.falcknutec.de

Falck Nutec is the world's leading provider of safety training / offshore safety training. Our offshore wind training has been designed and developed in close consultation with the wind industry. We provide thorough training to avoid accidents, and realistic training in an emergency situation. The courses consist of several modules that can be compiled individually. Falck Nutec has 30 centers in 18 countries around the world.

- ▶ Job Qualification and Personnel
- ▶ Operation and Maintenance













FERCHAU ENGINEERING GMBH, NIEDERLASSUNG BREMEN

Lloydstr. 4–6 28217 Bremen, Germany Tel +49 421 56557-0 bremen@ferchau.de www.ferchau.de

Mit mehr als 5000 Mitarbeitern in über 50 Niederlassungen und Standorten bundesweit ist FERCHAU Deutschlands Nr. 1 für Engineering. Unsere Ingenieure, Techniker und Entwickler sind in der ganzen Welt des Engineerings zu Hause. Nutzen Sie unsere Kompetenz in der Umsetzung anspruchsvoller Projekte für Ihren eigenen Erfolg in den Bereichen Offshore, Schiffbau, IT und Maschinenbau.

- ► Ships and Marine Technology
- ► Construction and Installation
- ► Project Planning

FHS FÖRDER- UND HEBESYSTEME GMBH

Fockestr. 53
27777 Ganderkesee, Germany
Karsten Göckemeyer
Tel + 49 4221-80008-30
karsten.goeckemeyer@fhs-sondertechnik.de
www.offshore-fhs.com

FHS Förder- und Hebesysteme: many years of experience in mechanical engineering for offshore, shipyards, defence and navy OFFSHORE TRANSFER SYSTEMS: safe, careful and efficient transfer of personnel and cargo MOVING TABLE: various applications on vessels

OFFSHORE CRANE: manriding and motion compensated safe and efficient handling cargo up to 3 tons, 20-m outreach, 30-m hook height

THE FERRYMAN: safe, simple and fast offshore gangway for small vessels.

- ▶ Ships and Marine Technology
- ▶ Operation and Maintenance
- ► Construction and Installation

FORSCHUNGS- UND ENTWICKLUNGS-ZENTRUM FACHHOCHSCHULE KIEL GMBH

Schwentinestr. 24 24149 Kiel, Germany Franziska Reimers Tel +49 431 990196-52 franziska.reimers@fh-kiel-gmbh.de www.fh-kiel-qmbh.de

The R&D centre Kiel University of Applied sciences GmbH tackles scientific challenges in any industry – from consultation through to project management. In addition it is operator of FIN01 and FIN03 (research platforms in the North Sea and Baltic Sea). The research projects on these platforms are expected to generate new and useful results with regard to foundation structures, wind and wave loads and other offshore-related parameters.

- ▶ Research and Development
- ▶ Project Planning
- ▶ Operation and Maintenance

















FOUNDOCEAN LTD

Liston Exchange, Liston Court
SL7 1ER Marlow, United Kingdom
Ken Taylor
Tel +44 1628 567000
Ken.Taylor@foundocean.com
www.foundocean.com

FoundOcean is a leading subsea offshore grouting specialist for the global Oil & Gas and Offshore Renewable energy construction industries. Its primary area of expertise is securing foundation structures to the sea bed by grouting. We provides life extension solutions for subsea, offshore structures including foundation repair services, pipeline support, protection services, cable support services, marine growth prevention and control products.

FR. FASSMER GMBH & CO. KG

Industriestr. 2 27804 Berne, Germany Christian Thoben Tel +49 4406 9420 windpower@fassmer.de www.fassmer.de

Fassmer is an internationally successful, family-owned company in its 5th generation working in 6 business areas: Wind Power, Shipbuilding, Lifeboats, Deck Equipment, Composite Technology and After-Sales-Service. For the offshore market Fassmer develops access systems, helihoists and survival cabins. Within the shipbuilding division Fassmer develops and manufactures special purpose vessels like Personnel Transfer Vessel and Offshore Service Vessel.

- ► Ships and Marine Technology
- ▶ Operation and Maintenance
- ► Spinner and Nacelles

FRAUNHOFER-INSTITUT FÜR FERTIGUNGSTECHNIK UND ANGEWANDTE MATERIALFORSCHUNG IFAM

Wiener Str. 12 28359 Bremen, Germany Prof Dr Bernd Mayer Tel +49 421 2246 400 ktinfo@ifam.fraunhofer.de www.ifam.fraunhofer.de

Fraunhofer IFAM provides R&D services in adhesive bonding, surface technology, and corrosion protection. The work focuses on materials, surface pre-treatment and functionalization, joining techniques, manufacturing technology, quality assurance, and includes FRPs and functional coatings (self-healing, anti-icing, -contamination, -soiling, - erosion, and low-drag). We offer certifying training courses in adhesive bonding technology and FRP technology.

- ▶ Research and Development
- ▶ Job Qualification and Personnel













FRAUNHOFER-INSTITUT FÜR WINDENERGIE UND ENERGIESYSTEM-TECHNIK IWES

Am Seedeich 45 27572 Bremerhaven, Germany Britta Rollert Tel +49 471-14290 220 britta.rollert@iwes.fraunhofer.de www.iwes.fraunhofer.de

The research activities of the Fraunhofer Institute for Wind Energy and Energy System Technology cover wind energy and the integration of renewable energy into supply structures. The annual budget was approximately 31 million euros in 2011. Fraunhofer IWES has a staff of 400 scientists, engineers, non-technical staff, and students.

Research and Development

FRAUNHOFER-INSTITUT FÜR WINDENERGIE UND ENERGIESYSTEM-TECHNIK IWES

Königstor 59
34119 Kassel, Germany
Susann Spriestersbach
Tel +49 561-7294-272
susann.spriestersbach@iwes.fraunhofer.de
www.iwes.fraunhofer.de

The research activities of the Fraunhofer Institute for Wind Energy and Energy System Technology cover wind energy and the integration of renewable energy into supply structures. The annual budget was approximately 31 million euros in 2011. Fraunhofer IWES has a staff of 400 scientists, engineers, non-technical staff, and students.

▶ Research and Development

GENERAL CABLE

Casanova 150 8036 Barcelona, Spain Olga Musons info@generalcable.es www.generalcable.es

General Cable Corporation is one of the world's leading cable manufacturing companies. With sales of over 5.8 billion USD, 47 manufacturing locations in 25 countries and 12,000 workers who provide service to a global network of clients worldwide, General Cable Corporation, a company in constant expansion and development, comprises General Cable North America, General Cable Europe & Med. and the Rest of the World.

► Energy Supply and Grid Operation / Cables















GEO-ENGINEERING.ORG GMBH

Leobener Str., Marum Building 28359 Bremen, Germany Tobias Mörz Tel +49 421 16690168 info@geo-engineering.org www.geo-engineering.org

The Geo-Engineering.org GmbH is a flexible and diverse exploration and consulting company in the field of subsoil investigation for offshore wind farms and employs geologists, geophysicists and engineers. From planning to execution and data evaluation, we offer comprehensive services in the field of (engineering-) geology, geophysics, geotechnics, soil mechanics and marine and laboratory techniques.

- ▶ Project Planning
- ▶ Research and Development
- Ships and Marine Technology

GEOSEA

Haven 1025 - Scheldedijk 30 2070 Zwijndrecht, Belgium Margot Vyt Tel +32 3 210 6798 Geosea.pr@deme.be www.deme.be

GeoSea is a specialised company for offshore works, focused on the drilling of large diameter piles, installation of offshore structures, and site investigation at sea. Large jack-up platforms and drilling and piling rigs are our plants of choice for working in water depths of up to 40m.

- ▶ Project Planning
- ► Construction and Installation
- ► Ships and Marine Technology

GERMAN RENEWABLES SHIPBROKERS GMBH

Große Bleichen 21 20354 Hamburg, Germany Philippe Schönefeld Tel +49 40 4116068 12 p.schoenefeld@german-shipbrokers.de www.german-shiprokers.de

You are looking for an offshore vessel or Jack-Up? You consider to divest or purchase offshore tonnage? You are faced with complex offshore logistics and transportation issues? You simple want to charter a specific offshore vessel? We provide you with a highly specialized team of brokers who are able to react flexibly to your demands. This makes us your charter specialist for any kind of vessel suited for offshore renewable energy projects.

- ▶ Ships and Marine Technology
- ► Logistics and Ports
- ► Construction and Installation













GERMAN WIND ENERGY ASSOCIATION (BWE E.V.)

Neustädtische Kirchstr. 6 10117 Berlin, Germany Lars Velser Tel +49 30 212341-253 Lvelser@wind-energie.de www.wind-energie.de

BWE is the national wind energy association in Germany with more than 20,000 members. Its activities include political communication, federal and regional lobbying as well as public relations and the organization of seminars. Furthermore BWE publishes the leading renewable energy journal "neue energie"/"new energy" and annual wind market overviews.

- ► Association
- ► Research and Development
- ▶ Information and Customer Service

GERMANISCHER LLOYD SE

Brooktorkai 18 20457 Hamburg, Germany Kerstin Haßlinger Tel +49 40 36149-702 kerstin.hasslinger@gl-group.com www.gl-group.com

Germanischer Lloyd (GL), the GL Group's maritime business segment, is a leading ship classification and technical advisory organization. GL offers classification services, plan approval, inspection and certification of materials & components as well as technical assessments for ships in service. GL is dedicated to providing high quality services, which ensure the safety of life and property at sea, and minimize impacts on the marine environment.

► Service provider / Classification company

GES DEUTSCHLAND GMBH

Bülowstr. 9 22763 Hamburg, Germany Lars Lichtenberg Tel +49 40 43216290 info@serviœs-ges.de www.services-ges.com

With 20-year experience in the Renewable Energy business, GES is a global service company providing wind farm construction, turbine assembly and 0&M services. With 4.000 employees, GES activity covers Europe, America and North Africa. Capitalizing on many years' experience in the offshore oil & gas industry, since 2009 GES Germany, located in Hamburg is active in the Offshore Wind sector providing services in Germany, UK, Sweden & Finland.

- ▶ Operation and Maintenance
- ► Construction and Installation
- ▶ Project Planning









GL Garrad Hassan

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GL GARRAD HASSAN DEUTSCHLAND GMBH

Brooktorkai 18 20457 Hamburg, Germany Kerstin Haßlinger Tel+49 40 36149-702 kerstin.hasslinger@gl-group.com www.gl-garradhassan.com

GL Garrad Hassan is the world's largest renewable energy consultancy. It offers independent technical and engineering services, products, and training courses to the onshore and offshore wind, wave, tidal and solar sectors. GL Garrad Hassan is a consulting company; it has no equity stake in any device or project.

► Service provider / Consultancy

GL RENEWABLES CERTIFICATION GERMANISCHER LLOYD INDUSTRIAL SERVICES GMBH

Brooktorkai 18 20458 Hamburg, Germany Monika Dippel Tel +49 40 36149-7485 monika.dippel@gl-group.com www.gl-group.com/renewables

GL Renewables Certification, the GL Group's renewables certification business segment, is a leading certification body primarily focussed on the certification of wind farms, wind turbines and their components. At the forefront of understanding in renewables technology, it is abreast of all the necessary standards and requirements and takes a harmonised approach in ensuring that these are met.

► Service provider / Certification company

GLOBAL DAVIT GMBH

Graf-Zeppelin-Ring 2 27211 Bassum, Germany Volker Malowitz Tel +49 4241 9335-24 v.malowitz@global-davit.de www.global-davit.de

Global Davit GmbH is a leading Europe manufactuere of life-saving appliances and deck cranes for all kind of seagoing vessels as well as for the (gas-, oil and windenergy-offshore industry. Together with the well experienced design office. Global Davit is able to supply standard solutions as well as tailor-made systems which meets all the special requirements of their customers. Global Davit GmbH is located was founded end of 1999 and it is ISO 9001:2008.

- ► Equipment Supplier
- ► Ships and Marine Technology
- ► Cranes and Rescue equipment













GMA-WERKSTOFFPRÜFUNG GMBH

Sylvesterallee 2 22525 Hamburg, Germany Olaf Hübner Tel +49 178 8525-355 o.huebner@qma-group.com www.gma-group.com

GMA-WERKSTOFFPRÜFUNG.GMBH is one of the German market leaders in the field of quality assurance / materials testing as well as an accredited company (DIN ES ISO 17025 / EASA, PART 145, Airbus Lab Qualification, Nadcap). With focus on wind power business we offer services on site or in our testing laboratories for non-destructive as well as destructive materials testing, especially for rotor blades made of carbon composites.

- ▶ Operation and Maintenance
- ▶ Research and Development
- Materials testing and quality engineering



GUSTOMSC

Karel Doormanweg 25 3115 JD Schiedam, The Netherlands Jan Mark Meeuwisse Tel +31 10 2320 800 marketing@GustoMSC.com www.GustoMSC.com

GustoMSC is the leading design and engineering company for all types of mobile offshore units like jack-ups, semi-submersibles and vessels. We deliver equipment associated with our designs, such as heavy lift offshore cranes and jacking systems. In the offshore wind market our SEA and NG units for WTI installation are State-of-the-Art. Examples are Neptune, JB-115, Seafox 7, Seajacks Kraken, Wind Lift I, MPI Adventure and many more to follow.

- ▶ Research and Development
- ► Construction and Installation
- ▶ Ships and Marine Technology

HANS KIESLING GMBH & CO. KG

Batteriestr. 92 27568 Bremerhaven, Germany Hansjörg Kiesling Tel +49 471 95432 0 mail@kiesling-werkzeuge.de www.kiesling-werkzeuge.de

As a specialized retailer for tools, machinery, works equipment etc., we have already been a reliable partner for industry and craft since 1947. Ever on the spot - this means for us that our customers in Bremerhaven, Bremen and much further afield receive individual advice and delivery. Due to our close meshed supplier network and our warehouse capacities, we are able to deliver more than 150,000 high-quality products within 24 hours in all directions.

- ► Logistics and Ports
- ▶ Ships and Marine Technology
- ► Construction and Installation

















HANSA TEC HEBE- UND ZURRTECHNIK GMBH

Rudolf-Diesel-Str. 17 27711 Osterholz-Scharmbeck, Germany Tobias Fischer Tel +49 4791 964110 fischer@hansatec.de www.hansatec.de

Hansa Tec and RUD are specialists in lifting and securing loads as well as height safety. Our products reaches from lifting points to lifting chains, from wires to lifting slings, from ratchets to lashing straps, from steel to load suspension equipment, even from fall protection to rescue products. We can provide you with custom-made designs and special solutions to the serious challenges which are part and parcel of the transportation and assembly of wind turbines and components.

- ► Construction and Installation
- ► Logistics and Ports

HANSEN PROTECTION AS

Tykkemyr 27
1597 Moss, Norway
Anders Haneborg
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Anders. Haneborg@hansenprotection.no
www.hansenprotection.no

Hansen Protection is a high-tech company that over the years has developed some of the most advanced survival suits for protecting lives, at or in the sea. Hansen Protection has been a pioneer in safety at sea ever since the kapok life jackets came in 1932. With more than 250,000 suits delivered to 20 countries worldwide our greatest concern is to ensure optimal functionality and performance for all types of work on, under and beside water.

► Safety Equipment

HAWART SONDERMASCHINENBAU GMBH

Handwerksweg 8 27777 Ganderkesee, Germany Volker Behrens Tel + 49 4222 94139-10 Volker.Behrens@hawart.de www.hawart.de

We develop, design, manufacture and install equipment for rotor blade production and provide tailor-made logistics products to transport rotor blades, tower segments and other components for wind turbines. The company was founded in 1987 and is an independent medium-sized company head-quartered in Ganderkesee. Certified welding company from 1996 on. Manufactures in the wind energy sector use the leading technology solutions and appreciate the know-how, flexibility and quality of the HAWAWRT brand.

- ► Profile Category
- ► Supplier for rotor blade manufacturing

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 transport equipment rotor blades, towers and nacelles













HD SOLUTIONS GMBH

Detmolder Str. 235 33605 Bielefeld, Germany Andreas Sprickmann Tel +49 521 3056650 andreas.sprickmann@hd-solutions.de www.hd-solutions.de

HDS has a deep understanding of product lifecycle management products. Our team has real life experience to map and deploy these products to individual customer processes. We offer installation, customization, training, consulting and support for all kind of Siemens PLM Software. A highlight is represented by the new Material Data Management System (MDS), by HDS, which is completely built on top of Teamcenter.

- ▶ Project Planning
- ► Construction and Installation
- ▶ Operation and Maintenance

HEIDELBERGCEMENT BAUSTOFFE FÜR GEOTECHNIK GMBH & CO. KG

Neubeckumer Str. 92 59320 Ennigerloh, Germany Christof Pufahl Tel +49 2524 2951 735 christof.pufahl@heidelbergcement.com www.heidelbergcement-geotechnik.com

HeidelbergCement Baustoffe für Geotechnik is a producer of special building materials in the field of mining and civil engineering. With more than 50 years of experience we are experts for grouts. Based on this expertise knowledge we have developed special materials to be used in the field of offshore wind turbines (Grouted Joints) as well as construction filling materials with low thermal resistance for the embedding of high-voltage cables.

- ▶ Producer of building materials
- ► Energy Supply and Grid Operation / Cables
- ► Construction and Installation

HEMPEL (GERMANY) GMBH

Hindenburgdamm 60 D-25421 Pinneberg, Germany Lars Weber Tel +49 4101 7 07137 lawe@hempel.com www.hempel.de

A supplier to the wind energy industry since 1980, Hempel supplies high-performance protective coatings for all wind turbine components, from onshore towers and nacelles to offshore foundations and blades. Since supplying coatings to some of the first commercial wind turbines, Hempel has worked with many of the industry's leading wind turbine manufacturers to develop a wide range of coatings for the wind energy industry.

- ► Construction and Installation
- ► Ships and Marine Technology
- ▶ Operation and Maintenance

Systematic turning point.



Positioning and bonding rotor blade halves with precision down to the millimeter doesn't need to be a big-thrill adventure. The hydraulic HAWART-HINGE turning system takes care of the job quickly, accurately and with ease. And so it becomes a part of the HAWART family of systems for the production of rotor blades. These systems include automatic grinding machines, vacuum-driven equipment for handling components, as well as specialized transportation systems.

Around the world, manufacturers in the wind energy sector are using our standard and customized solutions and appreciate the know-how, flexibility and quality of the HAWART brand.



- ► HAWART Sondermaschinenbau GmbH
- ► Handwerksweg 8 | 27777 Ganderkesee | Germany
- ► Phone +49 (0) 4222/94139-0 | Fax +49 (0) 4222/94139-60
- ▶ www.hawart.de | info@hawart.de

















HOCHTIEF SOLUTIONS AG CIVIL ENGINEERING AND TUNNELING

Alfredstr. 236 45133 Essen, Germany Dr Christoph Budach Tel +49 201 824-3869 christoph.budach@hochtief.de www.hochtief.de/hochtief

The new drilling concept developed by HOCH-TIEF AG and Herrenknecht AG - Offshore Foundation Drilling (OFD®) - aims to permit foundations which are constructed in an economical and environmentally-compatible manner. This process involves anchoring the foundation structures for offshore wind energy turbines in the sea floor by drilling which reduces noise pollution while simultaneously offering other technical advantages.

► Construction and Installation

HOCHTIEF SOLUTIONS AG CIVIL ENGINEERING MARINE AND OFFSHORE

Fuhlsbüttler Str. 399 22309 Hamburg, Germany Tel +49 40 300321-5500 marine-works@hochtief.de www.hochtief-solutions.com/cem

The Civil Engineering Marine and Offshore branch, the competence centre for harbour and marine construction and civil engineering, has established itself in the dynamic offshore wind market as a leading provider in recent years, with high-performance equipment, innovative processes and specially trained offshore personnel. The branch offers customised solutions for complex and demanding offshore projects. HOCHTIEF Solutions is a member of BOSC.

- ► Construction and Installation
- ► Logistics and Ports
- Operation and Maintenance

HOFFMANN GMBH

Herbert-Ludwig-Str. 4 28832 Achim, Germany Olaf Seekamp Tel +49 4202 5270 o.seekamp@hoffmann-group.com www.hoffmann-group.com

The Hoffmann Group, as Europe's leading systems partner for quality tools, combines trading capabilities with both manufacturing and service competence. The company serves major quoted companies as well as mediumsized and small companies in 47 countries. Including GARANT, its own premium brand, the Hoffmann Group offers 55,000 quality tools from the world's leading manufacturers. With comprehensive customer service and 99 percent delivery quality certified by the TÜV, the tooling experts with their head office in Munich ensure that their customers experience efficient cooperation in partnership.

- ► Technical Sales Company for Quality Tools
- ▶ Project Planning
- ▶ Information and Customer Service













HYDAC INTERNATIONAL GMBH

Industrie Gebiet 66280 Sulzbach/Saar, Germany Ernst-Wilhelm Langhoff Tel +49 6897 509-01 info@hydac.com www.hydac.com

HYDAC has been active in the wind turbine sector with Fluid Technology Electronics and Engineering for over 40 years and operates over 45 international subsidiaries with more than 7000 employees and has over 500 distributors and service partners worldwide. Complete systems and filtration concepts for lubrication and hydraulics as well as cooling/ fluid-temperature management systems for gear oils and generators are the main focus.

- ► Research and Development
- ▶ Operation and Maintenance

HYTORC-BABARINO + KILP GMBH

Justus-von-Liebig-Ring 17 82152 Krailling near Munich, Germany Patrick Junkers Tel +49 89 230999-0 info@hytorc.de www.hytorc.de

hydraulic, pneumatic and electrical Bolting-Technologies from 60 Nm to 190.000 Nm. Torque-; Yield-; Angle-; or Load controlled tightening of Nuts and Bolts with portable Tool-Systems.

- ▶ Operation and Maintenance
- ► Construction and Installation

IN.POWER GMBH

An der Fahrt 5 55124 Mainz, Germany Marius Wolter Tel +49 6131 69657-211 marius.wolter@inpower.de www.inpower.de

in.power GmbH concentrates on energy network & trade, metering, research and development as well as consulting. As one of the first companies to focus on direct marketing, in.power is a pioneer in the market inteqration of power from fluctuating renewable energy sources such as photovoltaic and wind power plants (based on the market premium and green power privilege instruments), thus optimizing the marketing of electricity according to the EEG.















INASEA - INSTITUTE FOR SUSTAINABLE ACTIVITIES AT SEA

Kirchlintelner Str. 3 28325 Bremen, Germany Dr Michaela Mayer Tel +49 421 2575001 mayer@inasea.de www.inasea.de www.offshore-training.de

INASEA is an independent private institute for sustainable activities at sea. It provides maritime service in qualification of workers, support sea projects such as cruising or new engineering technologies, and conduct multidiscipline research missions. INASEA ACADEMY conducts maritime safety courses for offshore wind turbines as well as the oil and gas industry via: • BOSIET • HUET & EBS

- ▶ Job Qualification and Personnel
- Research and Development

INGENION GMBH

Schellerdamm 16 21079 Hamburg, Germany Andreas Gagneur Tel +49 40 284 1757 0 andreas.gagneur@ingenion-partner.de www.ingenion-partner.de

Ingenion GmbH - a professional engineering company with focus on project management services. Our proposal: Project management - demand oriented. If you need responsible project managers, well structured project offices or time scheduler with experience in contracts and claimmanagement we should get in contact. We offer best practice competence in project management from a variety of industries proven in many successful conducted projects.

- ▶ Project Management Services
- ► Consulting Management, Organisation and Processes
- Project Management Personnel Leasing

INSTITUTE OF SHIPPING ECONOMICS AND LOGISTICS (ISL)

Universitaetsallee 11-13 28359 Bremen, Germany Dr Kerstin Lange Tel+49 421 2209645 lange@isl.org www.isl.orq

Offshore wind energy - competitive factor logistics. ISL offers a simulation model which maps the entire logistics chain on land and sea for the construction of offshore wind farms. The tool enables the continuous representation of the production, transport and assembly processes. Relevant factors such as weather conditions, disturbances, processes or resources are modeled to optimize the maritime supply chain.

- ▶ Research and Development
- ► Logistics and Ports
- ▶ Project Planning













ITW DENSIT

Gasværksvej 46 9000 Aalborg, Denmark Julia Frost Tel +1 614 747-0850 jfrost@itwwind.com www.itwwind.com

A member of the ITW WindGroup, Densit's Ultra High Performance Concrete Ducorit ensures structural connections in on and offshore wind turbine foundations such as: Monopile, tripile, tripod, jacket and gravity foundations.

▶ Construction and Installation

J. MÜLLER AG / PORT OF BRAKE

Neustadtstr. 15 26919 Brake, Germany Antje Tussinger Tel +49 4401 914-125 antje.tussinger@jmueller.de www.jmueller.de

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▶ Logistics and Ports

J.H. JAEGER & EGGERS HANDELSGES. MBH

Bernauer Str. 5 28219 Bremen, Germany Marc Eggers Tel +49 421 3998-0 info@jaeger-eggers.de www.jaeger-eggers.de

Wholesale-company for tools, machines and industrial supply, working safety equipment, ship-supply

- ► Construction and Installation
- ▶ Ships and Marine Technology
- ▶ Operation and Maintenance











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JACK UP BARGE

Krausstraat 14-16 3364 AD Sliedrecht, The Netherlands Maarten Hardon Tel +31 184 420 091 M.Hardon@jackupbarge.com www.jackupbarge.com

Jack-Up Barge Self Elevating Platforms.
Jack-Up Barge is a leading supplier of Self Elevating Platforms for both energy markets as the heavy civil construction market. For water depths up to 50 meters and deck load up to 2500 tons Jack-Up Barge operates as a total supplier including payload and crew. Together with our partners we provide one stop shopping for all heavy equipment and services: PVE CRANES & SERVICES, DIESEKO GROUP and WORLD WIDE EQUIPMENT.

- ► Construction and Installation
- ► Ships and Marine Technology
- ► Logistics and Ports

JADEBAY GMBH ENTWICKLUNGSGESELLSCHAFT

Kutterstr. 3 26386 Wilhelmshaven, Germany Frank Schnieder Tel 49 4421 50048821 f.schnieder@jade-bay.com www.jade-bay.com

The city of Wilhelmshaven and the authorities Friesland, Wesermarsch and Wittmund have merged their economic regions to form the new JadeBay Region. Together we will develop the existing regional strength in the areas of industry and trade, but will concentrate in particular on using both the project of Germany's only deep-water container terminal in Wilhelmshaven-and innovative technologies to make the JadeBay Region a dynamic growth region.

- ▶ Research and Development
- ► Logistics and Ports
- ► Information and Customer Service

KÄUFER GEBR. BEFAHRTECHNIK GMBH

Muehlenberg 5
42499 Hückeswagen, Germany
Dirk Käufer
Tel +49 2192 9203 0
access@kaeufer.com
www.kaeufer.de

Kaeufer has developed and built access systems for 25 years. Kaeufer already designed the first suspended platforms for Wind-Turbines in 1996. Since that time numerous platforms have been installed in Europe and worldwide. Käufer offers certified mobile platforms and access systems for inspection, cleaning and maintenance of all Wind Turbines. The access systems can be bought or rented. Käufer access systems are safe and easy to install.

▶ Operation and Maintenance













KIWI, KIELER WIRTSCHAFTSFÖRDE-RUNGS- UND STRUKTURENTWICKLUNGS GMBH

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Fraunhoferstr. 2-4 24118 Kiel, Germany Daniel Kreutz Tel+49 431 2484-135 dkreutz@kiwi-kiel.de www.kiwi-kiel.de

The KiWi, Kiels business development corporation, serves as a link between the economy and the regional capital Kiel. The main task is the marketing of all commercial properties belonging to the city of Kiel. We assist businesses in localization, innovation and financial queries. As well as specializing in the classical field of encouraging economy with targeted projective queries, we also aid and assist in finding more than suitable tenants.

► Business Development

KLETTER-SPEZIAL-EINHEIT GMBH & CO. KG

Spessarstr. 50 63628 Bad Soden-Salmünster, Germany Manuel Marburger Tel +49 6056 98 36 57 0 marburger@kletter-spezial-einheit.de www.offshorerettung.de

The Climbing-Special-Unit is one of the biggest Companies, which offers an industrial rescue from heights service on the European Market. Actual we assure the rescue from heights on many different power plants. Now transfer the experience of many hundred rescue operations onshore to offshore. Our company aggregate the knowledge from rope rescue experts with special medical expertise to provide you the best possible service.

- ▶ Research and Development
- ► Construction and Installation
- ▶ Operation and Maintenance

KRAFTWERKSSCHULE E.V.

Deilbachtal 199 45257 Essen, Germany Michael Schuhmacher Tel +49 201 8489 133 info@kws-erneuerbare.de www.kws-erneuerbare.de

Systematic Training for Lasting ProficiencyAs a training facility for the power industry, the KWS POWERTECH TRAINING CENTER creates a basic and advanced training lineup every year. The lineup encompasses standardized and modularized training course systems as well as customized courses. KWS's training offerings contribute to the advancement of safety, environmental protection, and economy – an investment in the future that pays off!

▶ Job Qualification and Personnel





LEBUHN & PUCHTA RECHTSANWÄLTE



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LEBUHN & PUCHTA LAWYERS

Vorsetzen 35 20459 Hamburg, Germany Dr Johannes Trost Tel+49 40 3747780 johannes.trost@lebuhn.de www.lebuhn.de

LEBUHN & PUCHTA is a leading maritime law firm with a broad international legal service. A team of 16 highly qualified and experienced lawyers are ready to assist. Our main activities are maritime and commercial law with special emphasis on renewable energy, offshore business, shipbuilding, chartering, financing and marine insurance. We are also specialists in corporate law matters such as KG model, M&A, joint ventures and transactions.

- ► Consulting and legal advice
- Financing and Insurance
- ▶ Ships and Marine Technology

LERBS AG

Handelshof 32 28816 Stuhr, Germany Bernd Carspecken Tel +49 421 8992235 bernd.carspecken@lerbs.de www.lerbs.de

Lerbs is a wholesale company and a specialist for customized c-parts and logistics solutions. Our catalogue and stock range comprised - Mounting techniques - Ship supply - Factory equipment - Welding techniques - Protective equipment - Non ferrous metals - Storage techniques - Power tools - Hand Tools and Access techniques.

- ► Ships and Marine Technology
- ▶ Operation and Maintenance
- ▶ Turbine Engineering and Construction

LINKFTR AS

Richard Birkelandsvei 2B 7465 Trondheim, Norway Grim Gjønnes Tel +47 93401002 grim.gjonnes@linkftr.com www.linkftr.com

LINKftr AS delivers software for the fracture mechanics and fatigue community, primarily for offshore oil and offshore wind. Our product portfolio includes LINKpfat, a FEA post-processor for fatigue assessment with support for multiaxiality and stochastic loads. It also includes LINKpipe, a FEA-based tool for integrity analyses of tubular structures, including welded joints. LINKftr is co-located with NTNU and SINTEF in Trondheim, Norway.

- ► Construction and Installation
- ▶ Operation and Maintenance
- ► Research and Development













LUTELANDET UTVIKLING AS

Dale Senter 6963 Dale, Norway Stein-Arne Ottesen Tel +47 90129440 stein@lutelandet.no www.lutewlandet.no

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- ► Logistics and Ports
- ▶ Construction and Installation

MAN TRUCK & BUS AG

Vogelweiherstr. 33 90441 Nuremberg, Germany Peter Schedel Tel +49 911 420-6662 peter.schedel@man.eu www.man-engines.com

MAN Truck & Bus develops, produces and sells efficient diesel and gas engines ranging from 37 kW (50 hp) to 1,324 kW (1,800 hp). Beside being installed in the trucks and buses produced by the MAN Group, MAN engines are used – among others – in commercial vehicles from other manufacturers, for power generation in cogeneration plants and as drive units in agricultural machinery, rail vehicles, ships and boats and special-purpose vehicles.

- Ships and Marine Technology
- ▶ Operation and Maintenance

MARITIME CLUSTER NORTHERN GERMANY

Lorentzendamm 24 24103 Kiel, Germany Dr Niko von Bosse Tel +49 431 66666-866 vonbosse@wtsh.de www.maritimes-cluster-nord.de

The Maritime Cluster Northern Germany is the maritime industry network within the federal states of Hamburg, Lower Saxony and Schleswig-Holstein. Maritime Cluster Management's main areas of focus are the shipyard and supplier sectors, offshore technology and ocean engineering, as well as the link-up with shipping, shipping companies and port management. Our main task is to initiate technology projects in every sector of the maritime economy.

- ► Ships and Marine Technology
- ▶ Information and Customer Service
- ▶ Project Planning

















MARITIME CRAFT SERVICES LTD

Largs Yacht Haven, Irvine Road KA30 8EZ Largs, United Kingdom Menno Kuyt Tel +44 1475 675338 menno@maritimecraft.co.uk www.maritimecraft.co.uk

Maritime Craft Services (Clyde) Ltd own and operate Shoalbusters, Multicats, dive support & crew transfer vessels. Our modern fleet of vessels provide support services for all stages of offshore wind farm developments. All crew are highly skilled, motivated and STCW '95 certified. MCS is ISO 9001:2008 certified and we are committed to delivering a high quality service with safety and client satisfaction our key focus.

MARITIME OFFSHORE GROUP GMBH

Ludwig-Sütterlin-Strasse 3
28355 Bremen, Germany
Emilio Reales Bertomeo
Tel + 49 421 6967830
alexander.sander@maritime-offshore-group.com
www.maritime-offshore-group.com

Maritime Offshore Group is an innovative company in the field of "Offshore-Wind" projects. The main business is the design and engineering of foundations for WTG. We provide complete logistic solutions for "Wind-Projects" as well as the development and fleet management of Offshore Vessels.

- ► Construction and Installation
- ► Ships and Marine Technology
- ► Logistics and Ports

MBT GMBH MACARTNEY GROUP

Wischhofstr. 1-3, Geb. 11 24148 Kiel, Germany Dr Verena Dauben Tel +49 431 535500-70 v.dauben@m-b-t.com www.m-b-t.com

MBT is an equipment supplier and engineering consultant for marine technology. Our expertise is focused on the supply of oceanographic and hydrographic instruments including integration and maintenance services: Sonar systems for subsea condition monitoring and UXO survey, video equipment and robotics (ROV) for underwater surveillance, hydrographic survey systems, underwater telemetry solutions, underwater cable and connector systems up to 11 kV

- ► Ships and Marine Technology
- ▶ Operation and Maintenance
- ▶ Research and Development













MENCK GMBH

Am Springmoor 5a 24568 Kaltenkirchen, Germany Jeremy Tygielski Tel +49 4191 5911 530 jeremy.tygielski@menck.com www.menck.com

MENCK GmbH, an Acteon company, provides specialized hydraulic pile driving solutions to the offshore oil, gas, wind farm, bridge and harbor industries. The company offers a wide range of hammers, from 100 to 3500 kJ, supported by a complete after-sales service program. With over 40 years' experience in the offshore industry, MENCK has unprecedented engineering knowledge and experience in pile driving. Your success is based on MENCK!

► Construction and Installation

MESSE HUSUM & KONGESS

Am Messeplatz 12-18 25813 Husum, Germany Kerstin Kopp Tel +49 4841 902-0 info@husumwindenergy.com www.husumwindenergy.com

HUSUM WindEnergy was the leading trade fair for the wind industry even before it went global – and after more than two decades, it is still the world's premier wind trade fair. From 18 – 22 September 2012, HUSUM Wind-Energy will be welcoming 1,200 exhibitors from over 30 nations, more than 36,000 visitors from 90 countries, and will cover over 60,000 square metres of exhibition space. And we're surrounded by wind farms.

MONTANHYDRAULIK GMBH

Bahnhofstr. 39
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Dr Peter Lipphardt
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www.montanhydraulik.com

With multiple subsidiaries and production facilities worldwide the Montanhydraulik Group is today considered a premier address for hydraulic cylinders and hydraulic systems. Montanhydraulik GmbH specialises in the manufacture of high-tech hydraulic cylinders that can be found in mobile cranes, large excavators, reservoir dams, and offshore applications as well as in tunnel boring machines, steel plants or in a wide variety of customised solutions.

- ► Construction and Installation
- ► Ships and Marine Technology
- ▶ Project Planning



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For further information please contact:

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MTU FRIEDRICHSHAFEN GMBH

Maybachplatz 1 88040 Friedrichshafen, Germany Tel +49 7541 907013 www.mtu-online.com

MTU Friedrichshafen GmbH – A Tognum Group Company. MTU develops and manufactures diesel engines and complete propulsion/drive systems for ships, heavy land and rail vehicles, industrial drive systems and distributed energy systems. Covering diesel engines from 20 to 9,100kW as well as gas turbines, the range of products is one of the most modern and wide-ranging in the industry. For the control and monitoring of engines and drive systems, the company produces custom-tailored electronic systems.

MUEHLHAN AG

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21107 Hamburg, Germany
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Tel +49 75271150
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www.muehlhan.com

The Muehlhan Group is a reliable partner in industrial services and high-quality surface protection. As a full-service provider, we offer customers a broad range of services designed to meet the exacting quality standards expected in professional industrial services. Our operations are divided into five businesses: Ship Newbuilding & Ship Repair, Energy, Industry and Other Services. With our workforce of 2,100 employees worldwide, we generated sales of EUR 172 Mio. in 2011.

- ▶ Surface Protection and Anticorrosion
- ▶ Scaffolding
- ▶ Steel Construction

MUNS TECHNIEK B.V.

De Hoogjens 30a 4254 XW Sleeuwijk, The Netherlands Anton Breugem Tel +31 183 30 70 00 breugem@munstechniek.nl www.munstechniek.nl

Muns Techniek B.V. is a Dutch subsidiary of the Montanhydraulik Group and particularly specializes in the engineering, installation and commissioning of complete hydraulic systems from small power packs to custom built jacking systems with intelligent electrical controls and software programs. They are used in offshore applications such as jack-up vessels or installation ships as well as for wet dredging, shipbuilding and general constructions.

- ▶ Ships and Marine Technology
- ► Construction and Installation
- Project Planning













MÜTH SELBSTKLEBETECHNIK GMBH & CO. KG

Lukas-Welser-Str. 4 28309 Bremen, Germany Thomas Schulze Tel+49 421 171230 info@mueth.de www.mueth.de

MÜTH Selbstklebetechnik GmbH & Co.KG, an innovative supplier of industrial adhesive tapes in the area for WIND POWER blade manufacturer since its establishment. Through partnership combined with knowledge of self-adhesive products are produced in-house production of customized solutions, industrial adhesive tapes. Please contact us and request our expertise!

▶ Information and Customer Service

MWB MOTORENWERKE BREMERHAVEN AG

Barkhausenstr. 60 27568 Bremerhaven, Germany Stephan Schubert Tel +49 471 9450-181 stephan.schubert@mwb.ag www.mwb.ag

Ship conversion and repair, installation of ballast water treatment system, offshore wind operation & maintenance facilities and concepts, engine maintenance and repair, combined power & heat plants, installation of Dry Exhaust Gas Cleaning Systems, MWB is a member of BOSC pier length: 1.000 m water depth: 7-13 m maintenance centre: 8.000 m? Panmax Dock V 20,000 t 215 m x 35 m Dock I 8,000 t 162,5 m x 24 m

▶ Operation and Maintenance

NAUTILUS MARINE SERVICE GMBH

Blumenthalstr. 15
28209 Bremen, Germany
Steffen Pausch
Tel +49 421 2075416
s.pausch@nautilus-gmbh.com
www.nautilus-qmbh.com

- ► Safety Equipment
- ▶ Operation and Maintenance
- ▶ Ships and Marine Technology















NAWIO GMBH

Esslinger Str. 11-15 72649 Wolfschlugen, Germany Christian Knickenberg Tel+49 7022953060 c.knickenberg@nawio.de www.nawio.de

The NAWIO GmbH provides soft- and hardware solutions for wind farms and service companies. The main features are: integration of transport logistic process into wind park management, increase wind park availability, reduce service times and increase secureness of the staff.

- Ships and Marine Technology
- ► Logistics and Ports
- ▶ Operation and Maintenance

NCTENGINEERING GMBH

Inselkammerstr. 10 82008 Unterhaching, Germany Joachim Heckler Tel +49 89 665619-0 joachim.heckler@ncte.de www.ncte.de

NCTEngineering is a high-tech company developing and manucaturing innovative highprecision torque and force sensor systems for high-performance applications. Thanks to the unique features of a pure contactless measurement technology NCTE is able to provide high accurate, highly integrated, very robust and nearly maintenance-free sensor solutions for development, testing and series (e.g. condition monitoring).

- ▶ Research and Development
- ▶ Turbine Engineering and Construction

NGENTEC LTD

7-9 North St David Street EH2 1AW Edinburgh, United Kingdom James Murray Tel +44 131 5249444 james.murray@ngentec.com www.ngentec.com

NGenTec designs and supplies low, medium speed and direct drive permanent magnet generators for MW-scale wind turbines for onshore and offshore applications. Our innovative, cutting-edge generator technology has been developed to:

- · Decrease the cost of wind energy
- · Ease manufacturing and assembly
- · Increase reliability and availability
- · Maximise energy yield













NIEDERSACHSEN PORTS GMBH & CO. KG

Hindenburgstr. 26-30 26122 Oldenburg, Germany Joachim Birk Tel +49 4417992616 ibirk@nports.de www.nports.de

Niedersachsen Ports (NPorts) is the biggest operator of port infrastructure in Germany. With its seaports Brake, Cuxhaven, Emden, Stade and Wilhelmshaven NPorts has excellent transport connections to the European and Eastern European hinterland as well as overseas. NPorts takes the challenges of the offshore wind industry into account with the necessary investments in special port infrastructure and is today one of the leading player in the market.

► Logistics and Ports

NOBISKRUG GMBH

Kieler Str. 53 24768 Rendsburg, Germany Dirk Zademack Tel +49 4331 207180 dirk.zademack@nobiskruq.com www.nobiskrug.com

Nobiskrug is a shipyard with more than 100 years of experience in the construction of large seagoing vessels. Together with the Abu Dhabi MAR Kiel, the former HDW Gaarden, Nobiskrug is a turn-key supplier for Offshore Platforms and Jack-up Vessels.

Ships and Marine Technology

NOBLE DENTON CONSULTANTS LTD.

39, Tabernacle Street, Noble House EC2A 4AA London, United Kingdom

Tel +49 40 36149-702 kerstin.hasslinger@ql-group.com www.gl-nobledenton.com

GL Noble Denton, the GL Group's oil & gas business segment, provides independent technical services and software helping to design and develop, operate and execute, and assure oil and gas assets. GL Noble Denton's expertise spans upstream operations, such as on- and offshore exploration, production and delivery storage; midstream import, storage and processing; and downstream distribution across the lifecycle of oil and gas installations.

► Service provider / Consultancy











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NORDDEUTSCHE SEEKABELWERKE GMBH

Kabelstr. 9-11 26954 Nordenham, Germany Erhard Weitzenfelder Tel +49 4731 821255 power@nsw.com www.nsw.com

Norddeutsche Seekabelwerke GmbH (NSW), a wholly-owned subsidiary of General Cable since 2007, has been one of the world's leading companies in the field of submarine telecommunication cables for over 111 years. During the last five years, NSW has established itself in the market for submarine power cables, in particular for renewable energies. NSW and its more than 500 employees advise and support customers all over the world.

- ▶ Energy Supply and Grid Operation / Cables
- Project Planning
- ► Construction and Installation

NORDIC YARDS HOLDING GMBH

Wendorfer Weg 5 23966 Wismar, Germany Olaf Wunderlich Tel +49 3841 77-0 info@nordicyards.com www.nordicyards.com

Nordic Yards is one of the leading manufacturers of innovative special ships and complex offshore structures. It belongs to the foremost engineering and fabrication contractors for the wind and the oil & gas industry. The interplay of broad experience in high-tech shipbuilding and modern, spacious plants offers the perfect basis for the development and manufacture of offshore projects, e.g. platforms, foundations, installation and supply vessels.

- ► Ships and Marine Technology
- ► Construction and Installation
- ▶ Research and Development

NORDSEE NASSBAGGER- UND TIEFBAU GMBH

Anne-Conway-Str. 9 28359 Bremen, Germany

Tel +49 421 3300590 info@nordsee-deme.de www.deme.be

Nordsee is a specialized company which offers a wide range of activities to port authorities, developers, the offshore industry and specialized contractors: Dredging and land reclamation; Port extension, maintenance and deepening of navigation channels; Trenching and backfill for the construction of tunnels, berth pockets, etc.; Costal protection, beach reclamation, dike raising, rehabilitation& breakwater construction; Offshore related services.

- ► Construction and Installation
- ▶ Operation and Maintenance
- ▶ Information and Customer Service













NORDWEST ASSEKURANZMAKLER GMBH & CO. KG

Herrlichkeit 5-6 28199 Bremen, Germany Vanessa Schippmann Tel+49 421 9896 07 280 v.schippmann@nw-assekuranz.de www.nw-assekuranz.de

Nordwest Assekuranzmakler is a modern, private-owned insurance broker with a special expertise in the area of renewable energy and maritime industry. We provide market-leading insurance solutions and risk management consulting for renewable energies onshore and offshore worldwide. We are recognised partners of project developers, operators, manufacturers, banks, investors and suppliers.

Financing and Insurance

NORMENSTELLE SCHIFFS- UND MEERES-TECHNIK (NSMT)

Frankenstr. 18 b 20097 Hamburg, Germany Heinz-Peter Hecker Tel +49 40 69 70 84-0 heinz-peter.hecker@din.de www.nsmt.din.de

The Shipbuilding and Marine Technology Standards Committee (NSMT), a standards committee of DIN Deutsches Institut für Normung e. V., is responsible for the national standardization in the area of shipbuilding and marine technology and for the German involvement in the respective European and international committees (CEN/CENELEC respectively ISO/IEC).

▶ Information and Customer Service

NORTEK AS

www.nortek-as.com

Nortek is a marine instrumentation manufacturers. We develop and manufacture Acoustic Doppler Current Profilers (ADCP) and current meters for use in the ocean and laboratories. Nortek works with a wide range of people in many different areas, including: Field scientists, Design engineers, Computer and Laboratory modelers and operators. Many, of whom, focus on similar problems within the marine renewable market, from their own specific perspective.

- ► Research and Development
- Construction and Installation
- Operation and Maintenance

















NORWEGIAN RENEWABLE ENERGY PARTNERS - INTPOW

Hoffsveien 23 275 Oslo, Norway Morten Bygland Tel+47 21 01 12 90 morten@intpow.com www.intpow.com

Norwegian Renewable Energy Partners - INTPOW promotes Norwegian Renewable Energy capabillities internationally. INTPOW is a non-profit organisation, established in cooperation between the Norwegian Authorities and the Norwegian renewable industry business. Norway seeks to strengthen the long-term perspective on value creation and employment within its energy sector. This will be done through internationalisation of Norwegian technology in a competitive renewable energy market.

- ► Consulting and Information
- Knowledge transfer from oil & gas to offshore wind
- **▶** Internationalization

NORWIND

NorWind Installer provides specialized transport and installation services for seabed foundations to the renewable industry having experience with installation of pre-piled jackets as foundations for offshore wind turbines and drilled foundations for tidal turbines. NWI also conducts engineering services and installation support to various clients.

- ► Construction & Installation
- ► Ships & Marine technology

OERLIKON SCHWEISSTECHNIK

Industriestr. 12 67304 Eisenberg, Germany Jürgen Krenzer Tel +49 6351 476 304 Juergen.Krenzer@airliquide.com www.oerlikon-welding.de

Demand the Welding ExpertiseOerlikon is a leading International brand owned by Air Liquide Welding. The brand has made a commitment to create value for customers throughout the world by bringing them innovative technologies, products and services in welding and cutting.

- ▶ Wind Force
- Off Shore
- ► Ship Building













OFFSHORE-KOMPETENZZENTRUM CUXHAVEN GMBH

Pestalozzistr. 44 27474 Cuxhaven, Germany Michael Pistoor Tel +49 4721 797214 kontakt@offshorekompetenz.de www.offshorekompetenz.de

The Offshore-Kompetenzzentrum Cuxhaven GmbH is a provider of BOSIET (basic offshore safety induction and emergency training) safety trainings for windfarm personnel, consisting of the modules sea survival training, helicopter underwater escape training (HUET), safety on board ships, transfer training, fire fighting, self rescue, ability to work at great heights, high mobility and personal protective equipment training.

- ▶ Job Qualification and Personnel
- ▶ Information and Customer Service

OFFTEC BASE GMBH & CO. KG

Lecker Str. 7 25917 Enge-Sande, Germany Matthias Volmari Tel +49 4662 89127-0 info@offtec.de www.offtec.de

OffTEC - the Offshore Training and Development Cluster is a unique training establishment for the offshore wind industry. The main focus is a new offshore training and qualification centre. OffTEC provides its own offshore infrastructure including real offshore-class wind turbines for training and test purposes. Further OffTEC creates safety and emergency concepts for offshore wind farms and offers personnel services for the offshore wind branch.

- ▶ Job Qualification and Personnel
- ▶ Information and Customer Service
- ▶ Operation and Maintenance

OFORNY GMBH

Riedemannstr. 1 27572 Bremerhaven, Germany Jörn Nikisch Tel +49 471 9627 990-13 joern.nikisch@oforny.com www.oforny.com

The OFORNY GmbH is a network organization with specialists for renewable energies and their industry. We implement strategic and operational projects at the customer in different roles. We optimize processes along the entire value chain from R & D, production planning, operation and service. We also obtain qualified staff through recruitment. We have created solutions that integrate systems and implement specific requirements of the industry.

- ▶ Information and Customer Service (Supply Chain)
- ▶ Operation and Maintenance
- ▶ Job Qualification and Personnel















OIS OFFSHORE INDUSTRIE SERVICE GMBH

Industriestr. 15
18069 Rostock, Germany
Katja Waschelewski
Tel +49 381 12834460
k.waschelewski@offshore-industrie-service.de
www.offshore-industrie-service.de

Offshore Industrie Service GmbH (OIS), with its headquarter in seaport Rostock, was established 2010 combining the existing offshore competences of the owner-companies Krebs-Group, IMG-Group and SEAR GmbH. OIS is a turn-key service provider for projecting, execution and supervising typical service and maintenance issues at offshore structures. We find solutions for appearing problems of any kind!

▶ Operation and Maintenance

OLDBAUM SERVICES LTD

Unit 13a, Alpha Centre, Stirling University Innovation Park
FK9 4NF Stirling, United Kingdom
Andy Oldroyd
Tel +44 1786 469639
andy@oldbaumservices.co.uk
www.oldbaumservices.co.uk

Oldbaum Services is a wind energy consultancy service, specialising in offshore wind resource assessment and instrumentation solutions for acquiring data offshore. Whether it is novel Remote Sensing solutions ranging from static LiDAR to floating LiDAR, to traditional Met mast instrumentation solutions, Oldbaum have the experience and know-how to provide a solution for you.

OWEC TOWER AS

Storetveitveien 96 5072 Bergen, Norway Ingrid Wootton Tel +47 975 01 898 ingrid@owectower.no www.owectower.no

OWEC Tower is a leading company in developing and delivering detail engineering services for foundations in the offshore wind industry.

- Jacket design (basic & detail) for offshore wind turbines; OWEC Quattropod
- ► Research and Development















PALFINGER WIND

Moosmühlstr. 1 5203 Köstendorf, Austria Thomas Nitsch Tel +43 6216 7660 - 0 wind@palfinger.com www.palfingermarine.com

PALFINGER WIND is the world's leading manufacturer of cranes for the wind industry with 10 years of experience. We are the preferred supplier of onshore and offshore cranes for nacelles, platforms & transformer stations. We offer a complete service concept for the wind industry. It is based on an ideally matched set of nacelle and platform cranes to minimize downtime. Our service concept is backed up by a worldwide service network.

- ▶ Operation and Maintenance
- ▶ Turbine Engineering and Construction
- ► Ships and Marine Technology

PETROFAC

Bridge View, 1 North Esplanade West AB11 5QF Aberdeen, United Kingdom Richard Cooke Tel +44 1224 247000 offshorewind@petrofac.com www.petrofac.com/offshorewind

Petrofac delivers engineering, procurement and construction projects, and operations and maintenance of offshore infrastructure. We offer engineering and consulting services, project delivery, operations and maintenance, and training. Annually our global training business trains over 50,000 delegates and is working with the offshore wind industry to assess capability needs and create training syllabuses that develop safe and competent workforces.

- ▶ Operation and Maintenance
- ► Construction and Installation
- ▶ Energy Supply and Grid Operation / Cables

PFERD-WERKZEUGE AUGUST RÜGGEBERG GMBH & CO. KG

Hauptstr. 13 51709 Marienheide, Germany Jacqueline Müller info@pferd.com www.pferd.com

PFERD is manufacturer of premium-quality tools serving in diverse MRO processes such as cutting, grinding, milling, filing and brushing as well as for cleaning, deburring and producing defined surface finishes. The extensive range of tools compromises more than 7.500 surface finishing and cutting tools. PFERD quality is certified in accordance with EN ISO 9001.

- ▶ Operation and Maintenance
- ► Construction and Installation



There is an ideal interface between offshore wind and the grid

Reliable, efficient GEAFOL cast-resin transformers from Siemens

Even under the toughest environmental conditions, GEAFOL cast-resin transformers reliably withstand a lot in wind power stations and offshore wind farms. They are flame-retardant, self-extinguishing, and do not develop any toxic gases, even in the event of an arc fault. This is made possible by the environment-friendly epoxy quartz powder insulation. Moreover, the almost maintenance-free operation of GEAFOL transformers, which meet the highest environmental, climatic, and fire behavior classes, reduces life cycle costs, while their reduced non-load and short-circuit losses mean higher

efficiency. That's why GEAFOL transformers from Siemens, which represent 45 years of experience, ensure more power for your money.



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PINTSCH ABEN B.V.

Hünxer Str. 149 46537 Dinslaken, Germany Peter Börgers Tel +49 2064 602 313 p.boergers@pintschaben.com www.pintschaben.com

Over 150 years of experience and high production levels have made PINTSCH to a specialist in maritime aids to navigation and aviation. The products like buoys, AIS, marine lanterns and aviation lights are world wide in use for marking of offshore wind farms and WTG's. PINTSCH ABEN offers new products in maintenance-free and modern top performance LED technology. These products comply with the standards of the IALA and ICAO rather the AVV.

- ▶ Project Planning
- ► Construction and Installation
- ▶ Operation and Maintenance

PLAN B MARITIME & NAVAL SERVICE UG (HAFTUNGSBESCHRÄNGT)

Johannesweg 3 27809 Lemwerder, Germany Thomas Mohar Tel +49 421 40899 250 thomas.mohar@plan-b-service.com www.plan-b-service.com

plan B is the future in project planning and realization. Our experts support us in offering a wide range of expertises and flexabilities for. With our brand SaveShip we offer our clients almost everything, starting with automatization and data logging, towards construction and build of switchgear and controlgear.

- ► Ships and Marine Technology
- ▶ Operation and Maintenance
- ▶ Project Planning

PLARAD - MASCHINENFABRIK WAGNER GMBH & CO. KG

Birrenbachshöhe 17 53804 Much, Germany Klaus Teske Tel +49 2245 62881 info@plarad.de www.plarad.de

Specialist in bolting technology for production, installation and maintenance of wind turbines. Maschinenfabrik Wagner was established in 1962 and became an early pioneer in renewable energies. The brand name Plarad is established in the Windpower business for more than 20 years. The world's leading turbine manufacturers as well as all main wind tower installers are amongst the most satisfied customers of Plarad who profit from the outstanding experience.

- ▶ Operation and Maintenance
- ► Construction and Installation
- ► Turbine Engineering and Construction













PNE WIND AG

Peter-Henlein-Str. 2-4 27472 Cuxhaven, Germany Rainer Heinsohn Tel +49 4721 718 06 info@pnewind.com www.pnewind.com

PNE WIND AG is a developer of wind farms onshore and offshore with further competencies in wind farm operation and associated service. Beside the German market, PNE WIND AG is already activ in south-east Europe, United Kingdom, USA and Canada. Furthermore, PNE Wind AG develops offshore wind farm projects, of which four major projects have already been approved. Entry into foreign markets will also be examined for the offshore area.

- Project Planning
- ▶ Operation and Maintenance



PORT OF CUXHAVEN

Hamburg-Amerika-Str. 5 27472 Cuxhaven, Germany Roland Schneider Tel +49 4721 748-122 info@port-of-cuxhaven.de www.port-of-cuxhaven.de

Close to North Sea wind parks, a wide navigation channel, various deep water quays, no locks. Facilities active as a production, installation and service port. Heavy load infrastructure and handling equipment available. Ample handling facilities and areas for production, storage and pre-assembly of wind turbine components. Industrial real estate adjacent to port facilities.

- ▶ Logistics and Ports
- ► Construction and Installation
- ▶ Operation and Maintenance

PORT OF EMDEN

Erlenweg 6 26725 Emden, Germany Dr Jürgen Hinnendahl Tel +49 4921 51770 info@seaport-emden.de www.seaport-emden.de

Base port for both the onshore and the offshore wind energy industry; production sites for manifold offshore wind energy components; offshore shuttle services by ship and helicopter; maintenance and waste disposal for offshore purposes; outstanding port facilities; highly experiences staff; extensive areas for industrial settlements right on the waterfront.

- ▶ Logistics and Ports
- ▶ Operation and Maintenance
- ► Construction and Installation















PORT OF PAPENBURG

Hauptkanel rechts 68-69 26871 Papenburg, Germany Heinz Walker Tel +49 4961 82226 heinz.walker@papenburg.de www.papenburg.de

Handling and storage of project and heavy cargoes; production site for on- and offshore wind energy components, processing and preservation (rust-proofing) of offshore wind energy components.

- ► Logistics and Ports
- Construction and Installation

PORT OF SASSNITZ

Im Fährhafen 1 18546 Sassnitz / Neu Mukran, Germany Harm Sievers Tel +49 38392 55–111 info@faehrhafen-sassnitz.de www.faehrhafen-sassnitz.de

Port of Sassnitz is situated in the northeast of Germany at the Baltic Sea and offers best conditions to serve as a base port for the offshore industry. Through its location at the open sea there is no channel navigation or obligation for pilot services. A business park with a size of approx. 60 hectares offers excellent conditions for different kinds of companies, enabling them to realize the current potential of 6.500 MW in the Baltic Sea.

- ▶ Logistics and Ports
- ► Construction and Installation
- ▶ Operation and Maintenance

PRICEWATERHOUSECOOPERS AG WPG

Domshof 18-20 28195 Bremen, Germany Dr Thomas Ull Tel +49 421 8980-428 thomas.ull@de.pwc.com www.pwc.de

Our clients face diverse challenges, strive to put new ideas into practice and seek expert advice. We leverage all of our assets for our clients: experience, industry knowledge, high standards of quality and commitment to innovation. Building a trusting and cooperative relationship with our clients is particularly important to us.

PwC. 8,900 dedicated people at 28 locations. The leading auditing and consulting firm in Germany.

- ▶ Financing
- ▶ Project Planning













PSA ZENTRALE -DIENSTLEISTUNGEN AM SEIL

Plantage 9 28215 Bremen, Germany Josha von Hofe Tel+49 421 43744248 info@psa-zentrale.de www.psa-zentrale.de

Height rescue concepts, height safeguarding & height rescue operations

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Screening of personal protective equipment & rescue systems

Expert advice / sales & distributions for rescue, personal protective & technical equipment

- ▶ Job Qualification and Personnel
- ▶ Operation and Maintenance
- ► Construction and Installation

REETEC GMBH REGENERATIVE ENERGIE- UND ELEKTROTECHNIK

Cuxhavener Str. 10, Speicher 17 28217 Bremen, Germany Cornelia Mißler Tel +49 421 39987433 cornelia.missler@reetec.de www.reetec.eu

Inspired by the wind. REETEC's range of services includes: Electrical Engineering, Grid Connection, Electrical Installation, Mechanical Installation, Service and Maintenance, Trouble Shooting, Rotor Blade-Service, Aviation Obstruction Markers, Appropriated Development and Special Solutions. And all of that with wide experiences in Offshore as well as Onshore. The power of the wind has made us what we are today. And it inspires us further and further. REETEC is a member of BOSC.

- ► Construction and Installation
- ▶ Operation and Maintenance
- ▶ Logistics and Ports

RENDSBURG PORT AUTHORITY GMBH

Schulstr. 36
24783 Osterrönfeld, Germany
Birgit Brückner
Tel +49 4331 131116
info@rendsburg-port-authority.de
www.rendsburg-port-authority.de

The new Rendsburg Port in Osterrönfeld is the only large volume heavy-duty port in Schleswig-Holstein. It is the core of a developing cluster for regenerative energies, especially wind energy, in the economic area of Rendsburg. Furthermore the port will be an essential location for the handling of heavy-duty cargo of any kind that can be transported directly to the port via the interstate A7. A industrial park with the size of 800.000 m² is directly connected to the port.

- ► Logistics and Ports
- ▶ Information and Customer Service















RENDSBURG PORT GMBH

Am Kamp 7 24783 Osterrönfeld, Germany Kai Lass Tel +49 4331-4373981 info@rendsburg-port.de www.rendsburg-port.de

RENDSBURG PORT GmbH provides tailor-made port services in the break bulk port RENDSBURG PORT. The company acts as the port operator and offers a complete service for shipping, stevedoring, transport and logistics in the new port. The port, which is built directly at the Kiel-Canal, offers the ideal source for future-oriented companies with high requirements who are looking for the direct access to the international water ways.

- ► Logistics and Ports
- ▶ Project Planning

REPOWER SYSTEMS SE

Überseering 10 22297 Hamburg, Germany Norbert Giese Tel +49 40 55550900 info@repower.de www.repower.de

REpower Systems SE, a wholly owned subsidiary within Suzlon group, is one of the world's leading manufacturers of onshore and offshore wind turbines. The international mechanical engineering company develops, produces and markets wind turbines for almost any location – with rated outputs of 1.8 MW to 6.15 MW. Furthermore, the company offers its customers project specific solutions for turnkey, service and maintenance, transport and installation.

- ▶ Turbine Engineering and Construction
- ► Construction and Installation
- ▶ Operation and Maintenance

RHEINMETALL TECHNICAL PUBLICATIONS GMBH

Flughafenallee 11 28199 Bremen, Germany Lutz Fiedler Tel +49 421 457-4685 lutz.fiedler@rheinmetall.com www.rheinmetall-tp.com

Rheinmetall Technical Publications supplies civil and military customers with sophisticated logistics engineering and technical publications services. The company delivers high-quality technical publications including the spare parts documentation for operation, inspection, maintenance and repair of wind-turbines, aircraft, ground and naval systems. We also offer the logistics engineering for these products.

- ▶ Project Planning
- ▶ Operation and Maintenance
- ▶ Information and Customer Service









Rostocker Korrosionsschutz GmbH



RHENUS MIDGARD GMBH & CO. KG

Hüttenstr. 20 28237 Bremen, Germany Björn Wittek Tel+49 421 643 0185 bjoern.wittek@de.rhenus.com www.rhenus.com

The Rhenus-Group is one of Europe's leading logistics companies with more than 18,000 employees at 340 locations worldwide, generating a turnover of over € 3 billion. Rhenus Project Logistics offers clients from the wind energy industry tailor-made solutions for onand offshore wind projects. Rhenus operates seaports suitable for offshore use, e.g. in Cuxhaven, Wilhelmshaven and Nordenham.

- ► Logistics and Ports
- ▶ Project Planning

ROSENBERG NORD GMBH

Auf den Sandbreiten 3 28719 Bremen, Germany Oliver Rahmig Tel +49 421 64 20 31 Oliver. Rahmig@rosenberg-nord.de www.rosenberg-nord.de

The Rosenberg GmbH is a manufacturer for fans and airhandling units. Founded 30 years ago by Mr. Rosenberg, the group is acting nowadays as a global player with several production facilities and distribution offices in 45 countries. Especially in the field of offshore windpower, we are a reliable distributor and development partner. For more than 7 years now we sell to our customers special systems designed to meet the rough offshore conditions.

► Ships and Marine Technology

ROSTOCKER KORROSIONSSCHUTZ GMBH

Industriestr. 8a 18069 Rostock, Germany Peter Wahls Tel +49 176 12122099 p.wahls@krebsgruppe.de www.krebsgruppe.de

The Krebs Unternehmensgruppe Standing for advanced corrosion protection, for latest technology and flexibility.

- Ships and Marine Technology
- ▶ Operation and Maintenance













VORWEG GEHEN



ROXTEC GMBH

Am Schiffbeker Berg 8
22111 Hamburg, Germany
Matthias Brück
Tel +49 172 4392462
matthiasbrueck@roxtec.com
www.roxtec.de

At Roxtec, we develop, manufacture and sell complete sealing solutions for cables and pipes. Our system helps you reduce risks and ensure operational reliability. Whether you are operator, designer or installer, you can ensure cost-effective solutions for any opening – wherever cables and pipes pass through. And whatever size the cables are. This flexibility has made our system the reference standard in many industries. It simplifies design, planning and purchasing.

- ► Construction and Installation
- ▶ Operation and Maintenance

RTS WIND AG

Konsul-Smidt-Str. 90 28217 Bremen, Germany Stefan Lücking Tel +49 421 696800-00 stefan.luecking@rts-wind.de www.rts-wind.de

Operating in Wind Energy Technologies since 1997, RTS Wind AG is one of the leading and most experienced Employment Agencies, providing qualified personnel that is specialized in onshore and offshore wind installations and maintenance. RTS Wind AG combines customer requirements and potential employees' requests to ensure a successful business cooperation.

▶ Job Qualification and Personnel

RWE INNOGY GMBH

Gildehofstr. 1 45127 Essen, Germany Konrad Böcker Tel +49 201 12-14071 konrad.boecker@rwe.com www.rwe.com

RWE Innogy pools the renewable energy expertise and power plants of the RWE Group. The company plans, builds and operates facilities generating power from renewable energies. Onshore and offshore wind power projects are a focus of the company's activities. RWE Innogy will also expand biomass, hydroelectric power and new technologies. In addition, we support innovative companies in their growth phase by providing short-term finance.

- ▶ Project Planning
- ► Energy Supply and Grid Operation / Cables
- ► Construction and Installation

VORWEG GEHEN











RWE NETZSERVICE GMBH

Friedrichstr. 60 57 072 Siegen, Germany Benjamin Jambor Tel+49 271 584 2141 benjamin.jambor@rwe.com www.rwe.com

RWE Netzservice GmbH is part of RWE Deutschland AG, the distribution system operator (DSO) of the RWE Group which includes many of the Group's German subsidiaries and affiliates. With 2,500 employees RWE Rhein-Ruhr Netzservice is one of the largest private providers of network technology and network services in Germany and Europe.

► Energy Supply and Grid Operation / Cables

SABIK GMBH

Wilhelm-Maybach-Str. 3 19061 Schwerin, Germany Jens-Uwe Reißig Tel+49 385 676700-0 jur@sabik.de www.sabik.de

Sabik GmbH was founded in 2001 and is part of the Finnish Sabik Group Oy. Our company is located about 100 kilometers east of Hamburg in Schwerin. We dispose over more than 11 years of experience in dealing with aids to navigation in the Baltic and North Seas. These count among the most difficult-to-navigate waters of the world; characteristic for both are dense fog, high winds, seasonal ice, snow storms and freezing rain. We are meeting this challenge and develop complete solutions to mark Offshore Windmill Farms that stand up to the harsh environmental conditions and the high safety requirements.

- ► Aid-to-Navigation
- ► Marine Technology

SARENS NV

Autoweg 10 1861 Wolvertem, Belgium Peter Libert Tel +32 52 319 319 info@sarens.com www.sarens.com

Sarens is specialized in crane rental and engineering projects involving lifting and moving loads with exceptional sizes and weights. The family-owned business, currently active in 51 countries, employs some three thousand staff worldwide. Sarens' main customers are companies active in oil & gas, energy, petrochemicals, major civil projects and mining. A specialized wind division focuses on setting up wind turbines, both onshore and offshore.

- ► Construction and Installation
- ► Logistics and Ports
- ▶ Project Planning













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SCALDIS

Haven 1025 - Scheldedijk 30 2070 Zwijndrecht, Belgium Margot Vyt Tel +32 3 210 6798 Geosea.pr@deme.be www.deme.be

Scaldis is an international offshore contractor specialised in marine heavy lifting and transportation operations and developing specific lifting techniques for each project. The activities can be categorised as follows; oil and gas projects, renewables/environmental works, decommissioning works, civil works and heavy lifting in salvage related works.

- ► Construction and installation
- ▶ Operation and Maintenance
- ▶ Information and Customer Service

SCHNEIDER ELECTRIC ENERGY GMBH

Julius-Bamberger-Str. 8 28279 Bremen, Germany Alban Ruppelt Tel +49 421 43681-51 alban.ruppelt@schneider-electric.com www.schneider-electric.de

As a worldwide specialist in the areas of energy management and automation, with branch offices in more than 100 countries, Schneider Electric integrates solutions for energy and infrastructure. With more than 130,000 employees worldwide, Schneider Electric achieved a turnover of 22.4 billion Euros in 2011. It is our declared objective to help people, organisations and companies to make more out of their energy: Make the most of your energy.

- ▶ Project Planning
- ▶ Construction and Installation
- ► Energy Supply and Grid Operation / Cables

SCHOTTEL GMBH

Mainzer Str. 99 56322 Spay, Germany Ruben-Richard Singhof Tel +49 2628 610 info@schottel.de www.schottel.de

SCHOTTEL ranks among the world's leading manufacturers of high-quality marine propulsion systems, especially steerable propulsion units. From the Rudderpropeller (SRP) to Twin-Propellers (STP), Combi Drives (SCD), Pump-Jets (SPJ) and Transverse Thrusters (STT), right up to Controllable-Pitch Propellers (SCP), SCHOTTEL propulsion systems set vessels of different types and sizes in motion.

► Ships and Marine Technology











SCOTTISH DEVELOPMENT INTERNATIONAL

Atlantic Quay, 150 Broomielaw
G2 8LU Glasgow, United Kingdom
Leonore Frame
Tel +44 141 2282152
leonore.frame@scotent.co.uk
www.scottishdevelopmentinternational.com

Scotland has got a rich and proud history in heavy engineering from shipbuilding on the Clyde to the development of the North Sea oil and gas industry, innovation, invention and passion are in our blood. When it comes to advancing our offshore wind industry, we have the skills and the experience. No wonder overseas companies like Gamesa and Mitsubishi Power Systems Europe are developing their next generation of wind turbines in Scotland.

SEAENERGY PLC

Britannia House Endeavour Drive Arnhall Business Park AB32 6UF Westhill, United Kingdom Sonja McCallum Tel +44 1224 748480 sonja.mccallum@seaenergy-plc.com www.seaenergy-plc.com

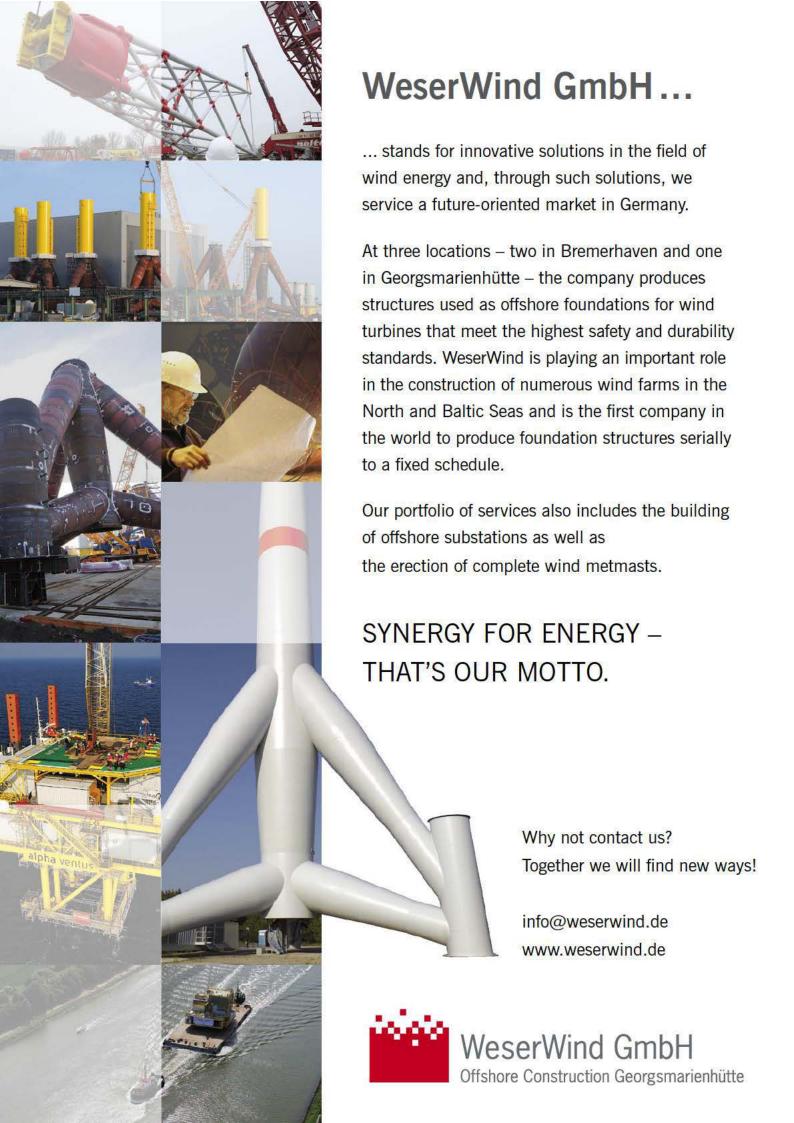
SeaEnergy PLC is building on its offshore windfarm development and oil & gas services heritage to develop an integrated energy services business. The innovative SeaEnergy offshore wind farm support vessel concept combines a number of innovative features to produce a vessel which is capable of delivering much higher levels of safe access to offshore wind turbines for technicians engaged in operations and maintenance.

SEAPORTS OF NIEDERSACHSEN GMBH

Hindenburgstr. 28 26122 Oldenburg, Germany Andreas Bullwinkel Tel+49 441 361888-88 info@seaports-offshore.de www.seaports-offshore.de

The seaports of Niedersachsen, located at the German North Sea coast, are the leading experts for logistics of offshore and onshore wind energy plants and components. State-of-the-art facilities, highly qualified staff and outstanding hinterland connections as well as a wide range of value-added services guarantee optimum conditions for efficient handling.

- ► Logistics and Ports
- ▶ Operation and Maintenance
- ► Construction and Installation

















SEATOWER AS

Sørkedalsveien 10B 369 Oslo, Norway Petter J. Karal Tel +47 480 111 99 petter.karal@seatower.com www.seatower.com

Seatower provides Cranefree Gravity Foundations, which are installed using towing vessels only. In addition to the cost and risk benefits, the foundations are highly ecofriendly. No dredging, piling or other seabed preparation is required.

- ▶ Research and Development
- Construction and Installation

SENERGY

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AB11 6DE Aberdeen, United Kingdom
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Senergy provides consultancy services in geohazards, geophysics, geotechnics and engineering, and specialises in project management of offshore surveys, site investigation and rig positioning. We provide services to the global oil and gas, renewables and subsea mining sectors.

- ▶ Project Planning
- ► Energy Supply and Grid Operation / Cables

SIAG NORDSEEWERKE GMBH

Zum Zungenkai 26725 Emden, Germany

Tel +49 4921 850 emden@siag-group.com www.siag-group.com

SIAG – System supplier for the on- and offshore wind energy Steel is the core competence of SIAG's two business units: - Wind Energy Technology Onshore: Steel towers, main frames and generator frames- Maritime Systems/Offshore: Steel towers, foundation structures, transition pieces and substations-SIAG Nordseewerke completes the position as a full-service supplier. We offer integrated concepts to our customers with high-level engineering know-how.

- Manufacturing of towers, foundation structures and substations
- ► Construction and Installation

SIEMENS











SIEMENS WIND POWER GMBH

Cuxhavener Str. 10 a 28217 Bremen, Germany Helmut von Struve Tel +49 421 69458-0 support_energy@siemens.com www.siemens.com/wind

Siemens is leading supplier of wind power solutions with over 20 years experience offshore. Siemens' team in the EMEA Head-quarters of Wind Power Service in Bremen is dedicated to increase availability and reliability through services for wind turbines. Our expert services offer not only regular maintenance but also provide innovative offshore solutions to maximizing performance and energy efficiency throughout the entire project lifecycle.

▶ Operation and Maintenance

SIGNALIS

Hanna-Kunath-Str. 3 28199 Bremen, Germany Jan Götze jan.goetze@signalis.com www.signalis.com

SIGNALIS offers advanced maritime traffic surveillance and management solutions for ports and demanding offshore applications. Powerful assistance functions and effective communication means serve to interface seamlessly with public maritime safety and security measures. SIGNALIS is a truly global player built on 25-years of global contract delivery with more than 350 successfully delivered contracts worldwide.

- ► Ships and Marine Technology
- ▶ Operation and Maintenance
- ▶ Information and Customer Service

STEEL ENGINEERING LTD

Units 7 & 8, Westway
PA4 8DJ Renfrew, United Kingdom
Peter Breslin
Tel +44 141 8862288
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www.steeleng.com

Steel Engineering Ltd is the largest fabricator of Renewable Structures in the West Coast of Scotland. We have completed two wave energy machines for Pelamis Wave Power. We are a fabrication provider for Offshore Wind foundations and tower structures with load out facilities up to 4000 tonne. We fabricate large complex structures for the oil & gas industry, pipe and cable lay carousels, plough & trenching equipment.

















STIFTUNG OFFSHORE-WINDENERGIE

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www.offshore-stiftung.de und
www.offshore-windenergie.net (Projekt OffWEA)

The German Offshore Wind Energy Foundation's mission is to expand the role of offshore wind energy in the future energy supply in Germany and Europe, and to advance its growth in the interest of environmental and climate protection. The foundation was initiated in 2005 by the Federal Ministry for the Environment in cooperation with the coastal states and all sectors of business active in the field of offshore wind energy.

 Political consulting, industry networking and knowledge transfer

STORMGEO

www.stormgeo.com

StormGeo is a world-wide supplier of meteorological services and consultancy. The company is active in offshore meteorology on a world-wide basis. In offshore wind the company is presently involved in 12 different projects, including 4 in German waters. StormGeo participates in several international research projects related to modelling of wind and waves over sea.

- ▶ Consultancy
- ▶ Research and development

STX NORWAY FLORØ AS

Ole Aaserudgate 7 6900 Florø, Norway Hans-Lyder Hammerseth Tel +47 4816 7805 hans.hammerseth@stxeurope.com www.stxeurope.com

STX Norway Florø is a well-established shipyard at the west coast of Norway. We have had long-term cooperation of building advanced chemical carriers for demanding and leading Owners within transportation of bulk liquid chemicals. Our new strategy is to repair and modify ship and rig as well as building of subsea constructions and wind turbine steel foundations.

- ► Construction and Installation
- ► Ships and Marine Tech.









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SUT SCHWEISS- UND UMWELTTECHNIK HANDELSGESELLSCHAFT MBH

Schonenfahrerstr. 2 18057 Rostock, Germany Sven Kuhlmann Tel +49 381 8651211 kuhlmann@sut-rostock.de www.sut-rostock.de

Trade in welding equipment, welding materials, welding fume extraction

- ▶ Trade
- Layout, sale and assembling of fume extraction systems
- Maintenance and technical service

TAGU TIEFBAU GMBH UNTERWESER

Ammerländer Heerstr. 368 26129 Oldenburg, Germany Jens Diekmann Tel +49 441 9704538 info@tagu.de www.tagu-offshore.com www.tagu.de

TAGU is a leading German company for harbour construction and Offshore installation, specialized in all kinds of working with floating equipment. We provide planning, design and construction for Offshore structures and Wind Energy Plants (e.g. Gravity Base Foundations) as well as Subsea Cable Installation, Shore End Installation (e.g. within sensitive coastlines like Wadden Sea Nationalpark) and associated services.

- ► Construction and Installation
- ► Ships and Marine Technology
- ▶ Operation and Maintenance

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THOST PROJEKTMANAGEMENT FÜR BAU-TEN UND ANLAGEN GMBH

Villinger Str. 6 75179 Pforzheim, Germany Nicole Balabanic Tel +49 7231 1560 13 n.balabanic@thost.de www.thost.de

THOST Projektmanagement coordinates and controls the development, engineering, design and realisation of complex international projects in the fields of energy, construction, transportation & industrial plants. We attend national / international investors from the vision through planning and approval to implementation and commissioning. Unique experiences across industries provide ideal solutions; motivated employees ensure the success of projects.

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Broeikweg 31a 2871 RM Schoonhoven Rotterdam, The Netherlands Hans Hoek Tel +31 6 10104613 sales@thrustmastereurope.com www.thrustmastertexas.com

Thrustmaster of Texas, Inc. is based in Houston, Texas with offices in Rotterdam, Singapore, Brazil and IndiaThrustmaster manufactures heavy duty commercial marine propulsion equipment including deck-mounted propulsion units, thru-hull azimuthing thrusters, retractable thrusters, tunnel thrusters, Z and L drives and the patented Portable Dynamic Positioning System.

- ► Thrusters and Propuslion
- ► Ships and Marine Technology
- ▶ Research and Development

THYSSENKRUPP MANNEX GMBH

Hatzper Straße 30 45149 Essen, Germany Lutz Krüger Tel +49 201 844 539052 lutz.krueger@thyssenkrupp.com www.thyssenkrupp-mannex.com

ThyssenKrupp Mannex is an internationally operating trading company. Our product range comprises pipes and tubes and their accessories, rolled steel, as well as structural elements for offshore and marine applications. Against the background of a fierce competitionon international markets, our strengths are a profound knowledge of products, market conditions, knowledge of products, market conditions, mentalities, and the additional asset of a comprehensive range of customer-focused services.

- ► Wind & Water Projects
- ► Customized solutions













THYSSENKRUPP SYSTEM ENGINEERING GMBH

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ThyssenKrupp System Engineering offers individual solutions and modular standards for all components in the car body and powertrain assembly process chains. The Testing Solutions Division of ThyssenKrupp System Engineering GmbH, a global leader in innovative testing, developed an online condition monitoring system - the MDI Wind - specifically designed for wind turbines.

- ▶ Research and Development
- ▶ Operation and Maintenance

TRADYNA

Hardenbergstr. 38 10623 Berlin, Germany H. Ercan Tasan Tel +49 30 31478714 info@tradyna.com www.tradyna.com

TRADYNA is an internationally active company that is engaged in special problem statements of engineering and is distinguished through the know-how from recent research and development works. Our principal services are planning, optimizing and monitoring of offshore structures. The core competence of the company is the innovative solution concepts for foundations of offshore wind energy converters.

- ► Construction and Installation
- ▶ Research and Development
- ▶ Turbine Engineering and Construction

TTS HANDLING SYSTEMS AS

Holterkollveien 6 1441 Drøbak, Norway Rolf-Atle Tomassen Tel +47 91862251 rat@tts-hs.no www.ttsgroup.com

TTS is a leading supplier of shipyard production technology, heavy load handling and shipyard consultancy. TTS has continuously developed systems for handling big loads/ships. We offer a wide range of products for efficient heavy load handling, as well as shiplift and slipway systems. Our transfer systems include rail trolleys, tyre wheel system and track/tyre-less systems.

- ► Ships and Marine Technology
- ► Logistics and Ports
- ▶ Research and Development

















TÜV SÜD INDUSTRIE SERVICE GMBH

Schnackenburgalle 117 22525 Hamburg, Germany Alexander Heitmann Tel +49 40 832951-71 Alexander. Heitmann@tuev-sued.de www.tuev-sued.de

TÜV SÜD Wind Cert Services: More reliability. Long-term profitability. The experience TÜV SÜD has gained in the area of wind energy over many years and our up-to-date know-how assist you in planning, constructing and operating safe and reliable wind turbines. From planning wind farms to designing wind turbines, TÜV SÜD offers comprehensive, customised consultancy and service.

- ► Information and Customer Service
- Research and Development
- ► Project Planning

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Pillauer Str. 15 28217 Bremen, Germany Christof Finken Tel +49 471 9322019 c.finken@kloska.com www.kloska.com

The Kloska Group is service partner and system supplier for shipping, shipyard, industry, on and offshore, construction and handicraft. A short-term, 100 percent granted delivery capacity is as obvious as a 24 hour service, the just-in-time-delivery and a competent and personal consulting. We offer an assortment which is especially tailored to the needs of the suppliers and service companies in the wind power industry.

▶ Operation and Maintenance

VESTAS OFFSHORE GERMANY GMBH

Christoph-Probst-Weg 2 20251 Hamburg, Germany Henrik Jensen Tel +49 40 467785192 vestas-offshore@vestas.com www.vestas.com

VESTAS - WIND IT MEANS THE WORLD TO US-VESTAS is one of the world's leading offshore turbine manufacturer. Vestas' offshore turbines, the V112-3.0 MW offshore turbine and the V164-7.0 MW offer our customers reliable and high performing offshore platforms and our offshore service offerings delivers business case certainty even in the most challenging offshore environments. Vestas has a dedicated business unit working solely with offshore located in Hamburg.

- ▶ Turbine Engineering and Construction
- ► Construction and Installation
- ▶ Operation and Maintenance













VISTAL GDYNIA S.A.

40, Hutnicza 81-061 Gdynia, Poland Robert Ruszkowski Tel +48 58 6631525 info@vistaLeu www.vistaLeu

VISTAL is a leading producer of steel structures that has actively operated on the European market since 1991 for the civil, energy, shipbuilding and off-shore industries. We do a range of comprehensive worksfrom the project documentation through prefabrication, anti-corrossion services, transportation and on-site assembly. VISTAL works in accordance with the requirements of the European Standards and specialist trade norms, confirmed by certificates.

- ► Construction and Installation
- ▶ Ships and Marine Technology

WAB E.V.

Barkhausenstr. 2 27568 Bremerhaven, Germany Anne Claire Bunte Tel +49 471 39177 10 anne.bunte@wab.net www.wab.net

The WAB Wind Energy Agency is the leading business network for the wind energy industry in Germany's northwest region and is the national point of contact for the offshore wind energy sector in Germany. The association counts more than 350 businesses and institutes among its members, who are active in all areas of the wind energy and maritime industries and in research.

▶ Information and Customer Service

WESERWIND GMBH OFFSHORE CONSTRUCTION GEORGSMARIENHÜTTE

Riedemannstr. 1 27572 Bremerhaven, Germany Dirk Kassen Tel +49 471 809310 info@weserwind.de www.weserwind.de

At three locations – two in Bremerhaven and one in Georgsmarienhütte – Weser-Wind produces structures used as offshore foundations for wind turbines that meet the highest safety and durability standards. WeserWind is the first company in the world to produce foundation structures serially to a fixed schedul. Our portfolio also includes the erection of complete wind metmasts as well as the building of offshore substations.

- ► Construction and Installation
- ▶ Operation and Maintenance
- ▶ Research and Development







BOOTH

Wilhelmshavener Hafenwirtschafts



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Wilhelmshauener Hafen



WFB WIRTSCHAFTSFÖRDERUNG BREMEN **GMBH**

Langenstr. 2-4 28195 Bremen, Germany Dr Erika Voigt Tel +49 421 9600-337 erika.voigt@wfb-bremen.de www.wfb-bremen.de

WFB Wirtschaftsförderung Bremen GmbH is responsible, on behalf of the Free Hanseatic City of Bremen, for developing, strengthening and marketing as a location for business. Its services and products are primarily aimed at helping to secure and create jobs and at providing businesses with an optimal environment for entrepreneurial success.

▶ Information and Customer Service

WIHELMSHAVEN PORT ASSOCIATION

Luisenstr. 5 26382 Wilhelmshaven, Germany Hans-Peter Kramer Tel +49 4421 44700 info@whv-wilhelmshaven.de www.wilhelmshaven-windenergie.de

Stevedoring, handling and storage of high & heavy components, RoRo-port facilities, logistics concepts and value-added-services for the wind energy industry, assembly facilities near to port facilities without tidal restrictions, integrated services for offshore wind energy industry: maintenance and repair of offshore foundations, cable installations, salvage; lay-by berths for floating offshore equipment.

- ▶ Logistics and Ports
- ▶ Operation and Maintenance

WILHELMSHAVENER HAFENWIRTSCHAFTS-VEREINIGUNG E.V.

Luisenstr. 5 26382 Wilhelmshaven, Germany Ulrich Schilling Tel +49 4421 44700 info@whv-wilhelmshaven.de www.wilhelmshaven-windenergie.de www.portofwilhelmshaven.de www.hafenwirtschaft-whv.de

The Wilhelmshaven port association (Wilhelmshavener Hafenwirtschafts-Vereinigung e.V.) has since its formation in 1985 concentrated on expanding the future potential and growth of the Wilhelmshaven seaport location. We bundle, represent and protect the interests of harbor associated companies towards politics, authorities and others and support maritime business developments. We are your contact for all your port commercial activities.

- ► Logistics and Ports
- ▶ Information and Customer Service









WIND TOWERS LIMITED







WILLENBROCK FÖRDERTECHNIK GMBH & CO. KG

Senator-Bömers-Str. 1 28197 Bremen, Germany Birgit Lenk Tel +49 421 5497190 birgit.lenk@willenbrock.de www.willenbrock.de

Willenbrock Fördertechnik Holding is provider for intralogistical services and offers innovative solutions for the intraplant transport. Core business is sales and renting of new and used forklift trucks and mancarrying platforms. As authorized dealer of Linde Material Handling Willenbrock operates in the greater areas of Bremen and Hannover. with 500 employers. Willenbrock stands for professional service with 180 technicians in the area of Nothern Germany.

► Logistics and Ports

WIND TOWERS LTD

PO Box 9263 PA28 6WA Campbeltown, United Kingdom David Steele Tel +44 7795 455875 david.steele@marshcompanies.com

Wind Towers Limited (WTL) manufactures and sells wind towers and other heavy critical welded components to major turbine manufacturers, utilities, and project developers. WTL provides excellent service and delivery to onshore and offshore wind farms in the UK, Ireland & Northern Europe and can fabricate, surface treat and install internals for all current and future types on onshore and offshore wind towers.

WIND:RESEARCH POWERED BY TREND:RESEARCH GMBH

Parkstr. 123 28209 Bremen, Germany Elena Werner Tel +49 421 437300 elena.werner@trendresearch.de www.windresearch.de

wind:research, is a research institute for wind energy that focuses on analyses and forecasts in the field of market, technology, competition, trends, opportunities and risks. A comprehensive database containing detailed information on offshore and onshore parks and projects word wide (e.g. georeferenced OWP-database), as well as thousands of conducted expert interviews and numerous exclusive projects (incl. M&A Projects) lead to broad-based support.

- ▶ Research and Development
- ▶ Project Planning

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WINDCOMM SCHLESWIG-HOLSTEIN -**NETWORK AGENCY FOR WIND ENERGY**

Schloßstr. 7 25813 Husum, Germany Martin Schmidt Tel +49 4841 66850 info@windcomm.de www.windcomm.de

windcomm provides business location information for new companies or companies seeking to expand in our region as well as business contacts to assist in sales or cooperation initiatives, windcomm also develops location marketing concepts for the whole of Schleswig-Holstein and addresses topical wind energy issues. This is complemented by meetings and events of various kinds, qualification workshops, exhibition stands and specialist publications.

- ► Clustermanagement & Consulting
- Qualification
- Eventmanagement

WINDEA OFFSHORE GMBH & CO. KG

Zirkusweg 1 20359 Hamburg, Germany Marinela Stoikos Tel +49 40 74203760 info@windea.de www.windea.de

WINDEA is a leading one-stop-shop in the offshore wind market. We act as a sole interface to the customer and are the partner for sustainable construction, operation and deconstruction in the offshore wind sector. WINDEA is a solution provider for air-, landand sea-side requirements regarding the needs of the offshore wind sector - with a team of capable and experienced associates.

- ▶ Operation and Maintenance
- ▶ Logistics and Ports
- ► Ships and Marine Technology

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Gammendorf 16 23769 Fehmarn, Germany Lars Lichtenberg Tel +49 40 43216290 Info@wka-service-fehmarn.de www.wka-service-fehmarn.de

Rotor blade specialist WKA-Service-Fehmarn is on international expansion course. Since 1994, it has been committed to the repair, maintenance and inspection of rotor blades using a worldwide unique service platform technology along with optimal fibre composite know-how. Its service platform technology can be used for any type of plant around the world. Rotor blades are inspected using special rope-assisted access methods.

▶ Operation and Maintenance

WOOD GROUP KENNY

Caledonia House234 Union Street AB10 1TN Aberdeen, United Kingdom Chas Spradbery Tel +44 1784417187 Chas. Spradbery@jpkenny.com www.jpkenny.com

Wood Group is an international energy services company with \$6bn sales, employing more than 41,000 people and operating in 50 countries. We have been involved in the assessment of over 65,000 MW of renewable energy development and our services include: Due Diligence and Feasibility Studies, Project management, Engineering design, Supply chain & Fabrication management, Installation, Operations & Maintenance and Decommissioning.

WPD AG

Kurfürstenallee 23a 28211 Bremen, Germany Mareile Heineke Tel +49 421 1686623 m.heineke@wpd.de www.wpd.de

wpd is a worldwide developer and operator of wind farms. In total, the company has realised projects with 1,400 turbines and an output of 2.2 GW. With a staff of 670, the company is planning projects in 20 countries with 7.5 GW onshore. Moreover, wpd is one of Europe's leading offshore developers, with 10 GW under development and 2 GW already consented. Currently, wpd is preparing the implementation of the Butendiek project in the German North Sea.

- ▶ Project Planning
- Operation and Maintenance
- ▶ Financing and Insurance





∩W Assekuranz







ZEPPELIN **Power Systems**



WS-TOOLS INDUSTRIEVERTRETUNGEN

Bahnhofstr, 5a 22941 Bargteheide, Germany

Tel +49 4532 2800537 info@ws-tools.de www.ws-tools.de

Well conceived concepts and intelligent ideas are based on reliability, expertise, know-how as well as mutual trust and confidence. For many forms of maintenance work, decisions need to be made on a functionally sound selection of seals, screws, tightening tools, assembly documentation systems and on the monitoring of measurement devices used; ws-tools, interfacing with its partner organisations, provides you with the required knowhow and the necessary package solutions from a single source.

XODUS GROUP

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Xodus Group is an international integrated surface subsurface engineering consultancy, offering life of field services to the Oil & Gas and Low Carbon industries. We have a team of over 400 experts across topsides, subsea and subsurface, working for the major, national and independent oil and renewable companies globally. We deliver and execute projects globally, supported by offices across five regions - Europe, Africa, Middle East, Asia Pacific and the Americas.

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Zeppelin Power Systems is the exclusive partner of Caterpillar engines (Cat and MaK) for over 50 years, offering their customers individual, highly effi cientsystem solutions with comprehensive services and an engine power range of 15 kW to 16 MW.

- ► Ships and Marine Technology
- ► OIL & GAS INDUSTRY/ Energy Supply and Grid Operation / Cables
- POWER GENERATION/ **Operation and Maintenance**







IMPORTANT TELEPHONE NUMBERS

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Trade fair organisation

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VENUES

Conference and Trade

MESSE BREMEN

WFB Wirtschaftsförderung Bremen GmbH Findorffstr. 101 28215 Bremen www.messe-bremen.de

Senate Reception and Opening of Conference

Bremen Town Hall Am Markt 28195 Bremen www.rathaus.bremen.de

Maritime Wind Dinner

ABC-Halbinsel Offshore-Terminal

WINDFORCE 2012 MANAGEMENT

Conference programme and management Steffen Schleicher, Wind Energy Agency WAB

Trade fair management and o ganisation
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Bremerhaven



More than just a port for the offshore wind industry

Containerterminal 1

The Containerterminal 1 serves as a base port for the offshore wind farm North Sea East 1. Along the 500-meter quay an area of 17 hectares for the handling, pre-assembling and storing of offshore wind power plants is available. As the terminal has a water depth of 12.60 metres the wind farm can be reached without transport vessels needing to stop at a lock.

2 Lloyd Shipyard

There are approximately 26 hectares industrial real estate on the Lloyd Shipyard available for the offshore wind energy industry. Existing offices, halls and storage areas can be used for production and services, as well as moorings for installation vessels and transport ships.

3 ABC-Halbinsel

At the so-called ABC-Halbinsel, adjacent to the car terminal, a 900-metre quay and sufficient space for handling, preassembling and storing of heaviest offshore plants is available.

ABC-Halbinsel: Quay and sufficient space for handling, pre-assembling and storing of heaviest offshore plants

Offshore Terminal Bremerhaven OTB

In Blexer Bogen, a new terminal is going to be built directly on the banks of the Weser River. With a heavy-load quay of half a kilometre in length, a 25-hectare surface area and two to three moorings it will also be able to handle seasonal transportation for the offshore wind industry from 2014 / 2015. Turbines can be loaded from the factory straight onto seagoing vessels of up to 10.80 meters depth. From OTB 160 wind turbines per year can be assembled and loaded onto special ships and jack-ups.

The 200 hectares located behind the area provide space for production and storage.

6 Labradorhafen

In Labradorhafen today, manufacturers handle nacelles, rotor blades and foundations. On the east and west sides of the dock, the kilometre-long quayside ensures sufficient space for large-scale maneuvres. The large heavy load areas (100 x 16 metres and $175 \times 15.5 / 26$ meters) can bear up to 50 tons per square metre.



Expansion area close to the Offshore Terminal Bremerhaven OTB



Containerterminal 1: Base port for the offshore wind farm North Sea East 1

Contact:

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www.bis-bremerhaven.de und Stadtentwicklung mbH







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