Editorial

On behalf of the project team, I am happy to welcome you to the fifth ECOWindS newsletter. This newsletter informs all involved and interested parties, regional authorities, the industry and other stakeholders about recent findings and conclusions, covering all four regions. One of the key outcomes of the project is the formulation of the Joint Action Plan (JAP), the first version has now been finalised and is described in more detail below. The objective of the JAP is to be an international, cross-regional agenda for research, development and innovation — specifically for offshore wind services.

A parallel task is to examine whether the limited degree of competences available to industry and research represent a bottleneck in realizing growth potential for OWS at present and within the timeframe of the Joint Action Plan. This task will be combined with an investigation of how experience gained in the Norwegian oil and gas industry can be simulated and utilised in the offshore wind industry.

All four regions have benefited from involving local stakeholders and knowledge persons in regional workshops. We appreciate the dedicated involvement of all participating stakeholders. Recommendations based on project findings will be presented at the final conference to be held on Tuesday 29th September 2015 at OrbisEnergy in Lowestoft, UK. Stakeholders in the OWS sector are invited. Read on in this newsletter and visit our website for more information at: www.ecowinds.eu

Hans A. Pedersen

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The ECOWindS Joint Action Plan for Offshore Wind Service Industry

The Joint Action Plan (JAP) is a key deliverable of the ECOWindS project. It presents an international, cross-regional plan of action — a roadmap for research, development and innovation (RDI) for the offshore wind servicing (OWS) industry.

OWS is a key industry that is very important for the financial and technical sustainability of the rapidly expanding offshore wind industry. The JAP supports the development of new and improved OWS business models, technologies and other concepts in support of generally reducing the cost of offshore wind power generation. The JAP complements other research agendas on wind power by approaching the challenges of offshore wind from the servicing perspective.

The JAP is the result of an intensive collaboration between project partners in Denmark, Germany, Norway and the UK in a process led by Technical University of Denmark (DTU). It is built on extensive industry consultation, analysis and strategy development completed earlier within the ECOWindS project.

The vision of the JAP is that OWS is a recognized industry by 2020, with strong networks around the globe and especially the North Sea. As offshore wind capacity grows, and as a consequence of industrialisation, standardisation and purposeful RDI, key components have been standardised to an extent that enables smooth installation, interoperability between components, and efficient operations and maintenance services.

The Joint Action Plan itself is a portfolio that comprises eight proposed actions that can be divided into four parallel work streams supporting each other: coordination actions; research, development and innovation; harmonisation and standardisation; and skills and qualifications (see diagram below).

The actions themselves can be viewed as projects or programmes that make up a portfolio of OWS development. Each of the four work streams contribute to one or more sub goals set for the JAP, which together take OWS and offshore wind closer to the overall target of lowering the levelized cost of energy.

The central storyline of the JAP is that through the development of interregional interconnections, OWS enterprises gain complementary capabilities and are able to deliver new and improved services to operators.
The JAP is an agenda for collaboration specifically for offshore wind services.

A key running theme in the JAP and the actions it outlines is the aim to bring national interests together, enable cross-border collaboration particularly around the North Sea, and extend networks overseas as the industry grows. The rationale is to leverage the best capabilities for enabling mutual learning across European regions, and to propel the OWS industry and indeed the entire offshore wind industry towards the future.

For a detailed description of the JAP and its actions, please see the full report, “Joint Action Plan – Guidelines for Implementation” (Deliverable 4.2), at www.ecowinds.eu. If you would like to know more about the JAP, or if you would like to contribute to the action plan, please contact the ECOWindS Team. © www.ecowinds.eu

Report published on innovation in offshore wind servicing / workshops held on idea generation

The ECOWindS project recently published its report on Supply and Demand of Research and Innovation in Offshore Wind Servicing. The report maps out technological solutions currently available in assembly, installation, and operations and maintenance, and includes examples of ongoing innovation projects. The report also identifies areas where there are gaps in technology and where solutions are already available to offshore wind servicing companies, highlighting where innovation is needed. Download the full report from our website soon.

Following the publication of this research, the ECOWindS project hosted a series of five workshops, one in each partner region plus one designed for international cluster representatives. The workshops were attended by key stakeholders in industry, research and administration.

The workshops had a dual purpose. First, they reviewed and checked the technology gaps that had been identified in the research. The second and major purpose for the workshops was to generate new innovation ideas and topics.
These ideas will be refined later in the project and assessed by industry experts to form the ECOWindS Innovation Catalogue. The catalogue will contain outline project concepts, matched with possible funding streams and potential partners, and will help set the future innovation landscape for the OWS sector.

The innovation catalogue is due for completion by October 2015. Additional information, opportunities for involvement, and further details will be published on the ECOWindS website. www.ecowinds.eu

Porting simulation from the oil and gas industry to offshore wind servicing

In the final project year AUC is heading ECOWindS Research on developing cross-cluster workforce competences and capacities, aiming to define a common training and learning platform for the realistic real-time simulation of OWS operations.

In OWS training can mean receiving practical guidance for a task, learning jobs such as inspections and safety procedures, monitoring checklists, receiving theoretical updates, specialising, or becoming familiar with the functions and behaviour of equipment.

Training sessions are usually held on site or in special training environments. For several reasons, training in the oil and gas industry is moving increasingly into a virtual environment, especially for safety and team-related activities. Firstly, equipment is generally expensive and replicas of installations are too expensive to build. Secondly, critical situations can be easily created in a virtual environment without harming any of the personnel involved. Last but not least, operations are often irreversible, with only one chance of success.

Training therefore becomes paramount in order to safeguard expensive assets and ensure the safety of the personnel involved. We believe we can harvest the experience gained in offshore oil and gas production in the North Sea and transfer some of what is learned to the offshore wind industry. It is important to see virtual training as a supplement to already ongoing training activities. Other issues will be addressed in addition to updating the technological profile of training. Training in the local cluster needs to be standardised so that personnel can always use their certificates and diplomas when crossing national borders. Strengthening and improving training will provide much better access to skilled personnel, and it will become an arena where the industry fosters innovation initiatives.

As we proceed with WP5, it will be important to take on board the results from previous work in order to be in line with the project's priorities. Here the Joint Action Plan is an essential starting point for this task. Presently, the work package has issued the first report on the simulation and training platform. The report describe the competence and capacity in the regions in terms of virtual training and also point at critical operations and scenarios, where the virtual training may be of importance. The report can be downloaded from the website. The action continues with a more detailed description of the training platform.

www.ecowinds.eu
Wind Energy Cluster of Northwest Germany – centre of innovation for offshore wind and offshore wind servicing (OWS)

Germany's northwest region is home to the country's vibrant offshore wind energy industry cluster. Located along Germany's North Sea coast, the cluster stretches from Emden to Hamburg, and has its centre in Bremerhaven. After more than 13 years of steady growth, the cluster has established itself as one of the leading offshore wind energy regions in the world, offering a wide range of competences and capacities in industry, research, training and qualification programmes.

It is a unique feature of the cluster that it encompasses the full value chain of the offshore wind industry. There is a strong manufacturing sector for turbines, blades and support structures. Wind farm developers and operators such as wpd, and wind farm operators, are key actors in the cluster as well. Moreover, the offshore wind servicing sector is strongly present in Germany's northwest region, providing a variety of products and services for installation, operations and maintenance. Germany's operations and maintenance market is expanding rapidly, and this subsector will become even more important in the future.

By the end of 2014, the German offshore wind market reached an important milestone with a total capacity of more than 1 GW from 258 offshore wind turbines, contributing to Germany's “energy turnaround”. While onshore wind power already has a long tradition in Germany, with 38 GW of capacity in 2014, the country's offshore wind market has now entered the take-off phase, with the expectation that it will massively accelerate. With a target of 6.5 GW by 2020 and 15 GW by 2030, Europe's potentially biggest offshore market is only a stone's throw away in the German North and Baltic seas.

The German offshore wind cluster is a pioneer in farshore wind farms. Germany's regulatory system, allows offshore wind farms to be installed only in the EEZ, means that the prime technical focus lies on the development of far offshore and deepwater solutions. In this environment, only the largest turbine classes (5 MW and up) are installed. The development of innovative solutions therefore has been and will be the key factor for success for German market players.

Research and development activities in the cluster are the driving force in developing farshore wind energy concepts, products and services. The highly innovative environment in the cluster is based on particularly strong research sector. Highly reputable institutions belong to the cluster, among them the Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), the Centre for Wind Energy Research at the universities of Oldenburg, Hanover, Bremen (ForWind), the Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Bremen (IFAM).

The offshore wind industry and the associated research sector in the cluster benefit from excellent infrastructure. The seaports of Brake, Bremen, Bremerhaven, Cuxhaven, Emden and Wilhelmshaven are important logistical centres and provide heavy-duty infrastructure. Also wide range of unique testing facilities such as the full blade testing system at the Fraunhofer IWES has been accessible to the industry in recent years.

The development of Germany's northwest region into one of the leading offshore wind energy centres is based on a strong partnership between business, research, qualification and the public sector, facilitating a well-functioning transfer of research and innovation to the market.
Wind Energy Agency WAB and its subsidiary germanwind – network, cluster management and innovation support for the offshore wind cluster in Germany’s northwest region

**Wind Energy Agency WAB e.V.** is the leading business network for the wind energy industry in Germany’s northwest region and 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 was founded in 2002 and is financially supported by the German State of Bremen. It acts as the official cluster management organization for the Germany Northwest wind energy cluster.

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, 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 organizes working groups on topics like “Operation and Maintenance” or “Foundations”, in which members discuss challenges and jointly develop innovative solutions. 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.

**www.wab.net**

**germanwind GmbH** was founded in 2009 as a subsidiary of Wind Energy Agency WAB. Its tasks are to foster innovation in Germany’s wind and offshore wind sector and help WAB members design their go-to-market strategy. germanwind therefore sets up research and development projects related to wind energy, supports project implementation, and arranges cooperation between businesses and research and development institutes in the region. Other tasks include market analysis and the promotion of training and qualification programmes in the wind energy sector. germanwind is partly funded by the State of Bremen.

**www.germanwind.info**

germanwind and WAB are both members of the **ECOWindS consortium** as official partner and third party respectively. Together both institutions add to the consortium their expertise on the German offshore wind industry and their knowledge on innovation needs, and both can rely on access to a wide network in Germany’s offshore wind business and research landscape.

Joint exhibition stand of WAB at the Husum Wind
ECOWindS welcomes a new contributor to the project

The ECOWindS consortium welcomes Offshore Renewable Energy (ORE) Catapult to the ECOWindS project as an associated partner.

ORE Catapult is the UK’s flagship technology innovation and research centre for offshore wind, wave and tidal energy, and is the UK counterpart to other innovation centres across Europe such as the Fraunhofer institutes in Germany.

In operation since 2013, ORE Catapult delivers prioritised research underpinned by world-class test and demonstration facilities, collaborating with industry, academia and government to reduce the cost of offshore renewable energy and thereby provide an economic benefit to the UK.

https://ore.catapult.org.uk/

Next Steps in the ECOWindS Project

The ECOWindS Project is in its final year, and due to finish in October 2015. However there is still time to learn more about our research and contribute to the final outputs setting the future innovation landscape for the OWS sector. In March and April we will be asking stakeholders to comment on the final development of the JAP, and through the summer stakeholders will have the opportunity to review and contribute to the ECOWindS Innovation Catalogue to get a first sight on the emerging research project concepts, funding sources and potential partners.

Save-the-date for the Conference “Increasing innovations in the European Offshore Wind Servicing sector” hosted by the ECOWindS Project

29th – 30th September 2015 at OrbisEnergy, Lowestoft, UK

The ECOWindS Consortium will host their final project conference in September 2015. Representatives from industry, research and administration are welcome to attend free of charge and participate, to hear the central project findings on the challenges and opportunities in the offshore wind servicing sector, and speakers from key industry and political figures.

The conference will include:
• Monday 28 – Network reception 6 - 9 p.m.
• Tuesday 29 – Innovation conference
• Wednesday 30 – B2B and industrial matchmaking

Keep checking the ECOWindS website for more details as they are released.

www.ecowinds.eu