

# Offshore Renewable Energies: Exploring the synergies

## Regional partnership roundtable event

**Venue:** [North East England Office in Brussels, 80 Boulevard St Michel, Brussels, B-1040](#)

**Time:** 16.00 – 18.30

Three roundtable sessions will be organised in parallel. You have already signed up to individual roundtables so please only attend the session that you have signed up to. Please be at the NEEO premises from 15.45 in order to be directed to your roundtables.

The roundtables are as follows:

**Roundtable 1:** Research and testing infrastructures for the offshore RES sector

**Roundtable 2:** Skills gap in the offshore RES sector

**Roundtable 3:** Supply chain for the offshore RES sector

Please find below the agendas for the roundtables.

This Round Table event is supported by the European POWER cluster project which is co-financed by the Interreg IVB NSR programme. POWER cluster is an international network of partners from the North Sea Region which builds upon the previous POWER project.

Among the objectives of the project are:

- Communicating the benefits of offshore wind energy to the public
- Promoting cooperation and exchange of information between offshore wind energy test centers
- Creating a business platform by matching supply chain capabilities of the partner regions, to foster the offshore wind industry in the North Sea Region
- Adapting and preparing the North Sea Region workforce to meet the needs of the offshore wind industry

More information: [www.power-cluster.net](http://www.power-cluster.net)



<b>Roundtable 1 – Research and testing infrastructures for the offshore RES sector</b>	
16:00 - 16:15	<p><b>Welcome and introduction</b></p> <ol style="list-style-type: none"> <li>1. What are the already available research and testing infrastructures available to offshore RES and how can these be mobilized by regional actors?</li> <li>2. What are the financial instruments available to the research community on offshore renewables, and what challenges are they facing in accessing them?</li> </ol> <p><b>Moderator: Jan Erik Hanssen - 1-Tech</b></p> <p><b>Rapporteurs: Mar Martin Raba – Cantabria representation &amp; Stéphane Peyhorgue – Bretagne representation</b></p>
16:15 - 16:30	<p><b>Offshore RES funding: What are the major trends at the EU level?</b></p> <ul style="list-style-type: none"> <li>• The SET plan and its implications on the research community <b>Filippo Gagliardi – EWEA</b></li> <li>• The Framework programme: exploring the offshore synergies <b>Niels Vinther – Alliance for Offshore Renewables</b></li> </ul>
16:30 - 16:45	<p><b>Research Infrastructures: Mobilising the total R&amp;D capacities for the benefit of the off-shore energy community through smart laboratory networking – Leveraging resources on a pan-European level</b></p> <p>Presentation of the MARINET project – <b>Ray Alcorn – Hydraulics &amp; Maritime Research Centre (HMRC – Cork)</b></p>
16:45 - 17:00	<p><b>Presentation of the European Energy Research Alliance</b></p> <p>How can the research community be involved and benefit from the EERA's activities? <b>Erik Lundtang Petersen - Risø DTU</b></p>
17:00 - 17:50	<p><b>Debate</b></p> <ol style="list-style-type: none"> <li>1. How can the research community further cooperate on offshore RES?</li> <li>2. How to maximize the value to all European users in the off-shore energy community of the large scale test centres now being established in many European regions?</li> <li>3. How can the greater capital needs of these be satisfied, maintaining some competition and stimulating Regions to identify local advantages?</li> </ol> <p><b>Input from MARINET and regional experts including local testing centres</b></p>
17:50 - 18:00	<p>Messages to bring back to the European institutions on the challenges faced and on the measures needed to address them at European, national, regional and inter-regional level</p>
18.00 - 18.30	<p>All roundtables to come together and rapporteurs will bring the key messages from each roundtable (main conference room)</p>

<b>Roundtable 2 - Skills gap in the offshore RES sector</b>	
<b>16:00 - 16:15</b>	<p><b>Welcome and introduction</b></p> <ol style="list-style-type: none"> <li>1. What are the skills requirements for the emerging offshore renewables industry?</li> <li>2. Which training models have the regions already developed and which ones could they explore in cooperation with their European equivalents?</li> </ol> <p><b>Moderator: tbd</b></p> <p><b>Rapporteurs: Ariane Decramer – Flanders representation &amp; Bodil Agasøster – Stavanger representation</b></p>
<b>16:15 - 16:30</b>	<p><b>Skills requirements for the offshore renewables industry</b></p> <ul style="list-style-type: none"> <li>• Power Cluster – Needs of education and suggestion of programmes and courses for offshore wind <b>Ian Fisher – Northumberland College</b></li> <li>• Ports Adaptation to Change - An insight in the skills needed to support the logistics development of offshore wind farms <b>Wim Stubbe, PATCH Project Manager, Port of Oostende</b></li> </ul>
<b>16:30-16:45</b>	<p><b>Intelligent Energy programme</b></p> <p>Examples of European projects supporting the development of offshore renewables skills</p> <p><b>Dana Dutianu – Executive Agency for Competitiveness and Innovation (EACI)</b></p>
<b>16:30 - 17:50</b>	<p><b>Debate</b></p> <ol style="list-style-type: none"> <li>1. Which training models have the regions set up to support the development of their offshore renewables sector?</li> <li>2. Which ones could they explore in partnership with other European regions? <ul style="list-style-type: none"> <li>• Proposal for a Leonardo project on wind turbine maintenance <b>Frank Emil Moen – Dalane College</b></li> <li>• Proposal for a Marie Curie Initial Training Network <b>Marcin Luczak - Fluid Flow Machinery Polish Academy of Science</b></li> </ul> </li> <li>3. What are the offshore skills synergies in the regional context? Are there best practices in EU regions regarding the establishment of guidelines for the direct impact of the development of this sector activity in the region?</li> </ol>
<b>17:50-18:00</b>	<p>Messages to bring back to the European institutions on the challenges faced and on the measures needed to address them at European, national, regional and inter-regional level</p>
<b>18:00 - 18:30</b>	<p>All roundtables to come together and rapporteurs will bring the key messages from each roundtable (main conference room)</p>

## Roundtable 3 - Supply chain for the offshore RES sector

16:00 - 16:15	<p><b>Welcome and introduction</b></p> <ol style="list-style-type: none"> <li>1. How can the regions organise the development of their offshore RES supply chains? Which tools have they created which could be shared across Europe?</li> <li>2. How can more transnational cooperation be encouraged in order to ensure the timely development of the offshore RES sector?</li> </ol> <p><b>Moderator: Duncan Botting – Scottish European Green Energy Center</b></p> <p><b>Rapporteurs: Thomas Jensen – South Denmark representation &amp; Karen Burt- Scotland Europa</b></p>
16:15 - 16:45	<p><b>Which tools have the regions created to support the development of their supply chains?</b></p> <ol style="list-style-type: none"> <li>1. Case studies: <ul style="list-style-type: none"> <li>• Case of Bremerhaven – <b>Mathias Grab - Bremerhaven Economic Development Company Ltd</b></li> <li>• Case of South West UK – Wave Hub – <b>Nick Harrington –South West RDA</b></li> </ul> </li> <li>2. Example of innovative foresight planning for offshore RES business development – an exportable scheme within Europe? <ul style="list-style-type: none"> <li>• Introduction of the IFP/ Innovative Foresight Planning INTERREG IVB North Sea IVB project – <b>Birger Haraldseid - Greater Stavanger Economic Development</b></li> </ul> </li> </ol>
16:45 - 17:50	<p><b>Debate</b></p> <ol style="list-style-type: none"> <li>1. There seems to be a trend towards shifting from building offshore wind farm as isolated projects towards serial/connected projects. How can the supply chain prepare in the best way to meet the requirements related to this new way of building offshore wind farms? How can the supply chain engage in clustering?</li> <li>2. To what extent is the mapping of the offshore wind supply chain transferable to marine? Have regions started developing such mapping?</li> </ol>
17:50 - 18:00	<p>Messages to bring back to the European institutions on the challenges faced and on the measures needed to address them at European, national, regional and inter-regional level</p>
18:00 - 18:30	<p>All roundtables to come together and rapporteurs will bring the key messages from each roundtable (main conference room)</p>



South West UK

Brussels Office

 **SCOTLAND EUROPA**



## The SET-Plan (I)

- ❑ The Strategic Energy Technology Plan (SET-Plan) is a European Commission blueprint for the development of low-carbon technologies
- ❑ The SET-Plan was published in November 2007 (COM(2007) 723)
- ❑ One of its objectives is the creation of European Industrial Initiatives (EII), i.e. long-term, large-scale Programmes for the development of low carbon technologies and the support of relevant R&D actions
- ❑ Most of EIIs were developed by relevant European Technology Platforms (ETPs), i.e. permanent networks representing relevant industries and R&D communities. TPWind was given the task of developing the European Wind Initiative (EWI)



## The SET-Plan (II)

### □ SET-Plan Ells are the following:

- The European Industrial Bioenergy Initiative (to be launched in November 2010)
- The European CO<sub>2</sub> Capture, Transport and Storage Initiative (launched in June 2010)
- The European Electricity Grid Initiative (launched in June 2010)
- The Fuel Cells and Hydrogen (FCH) Joint Technology Initiative (already operational)
- The Sustainable Nuclear Initiative (to be launched in November 2010)
- Energy Efficiency – The Smart Cities Initiative (to be launched in 2011)
- The Solar Europe Initiative (launched in June 2010)
- The European Wind Initiative (launched in June 2010)

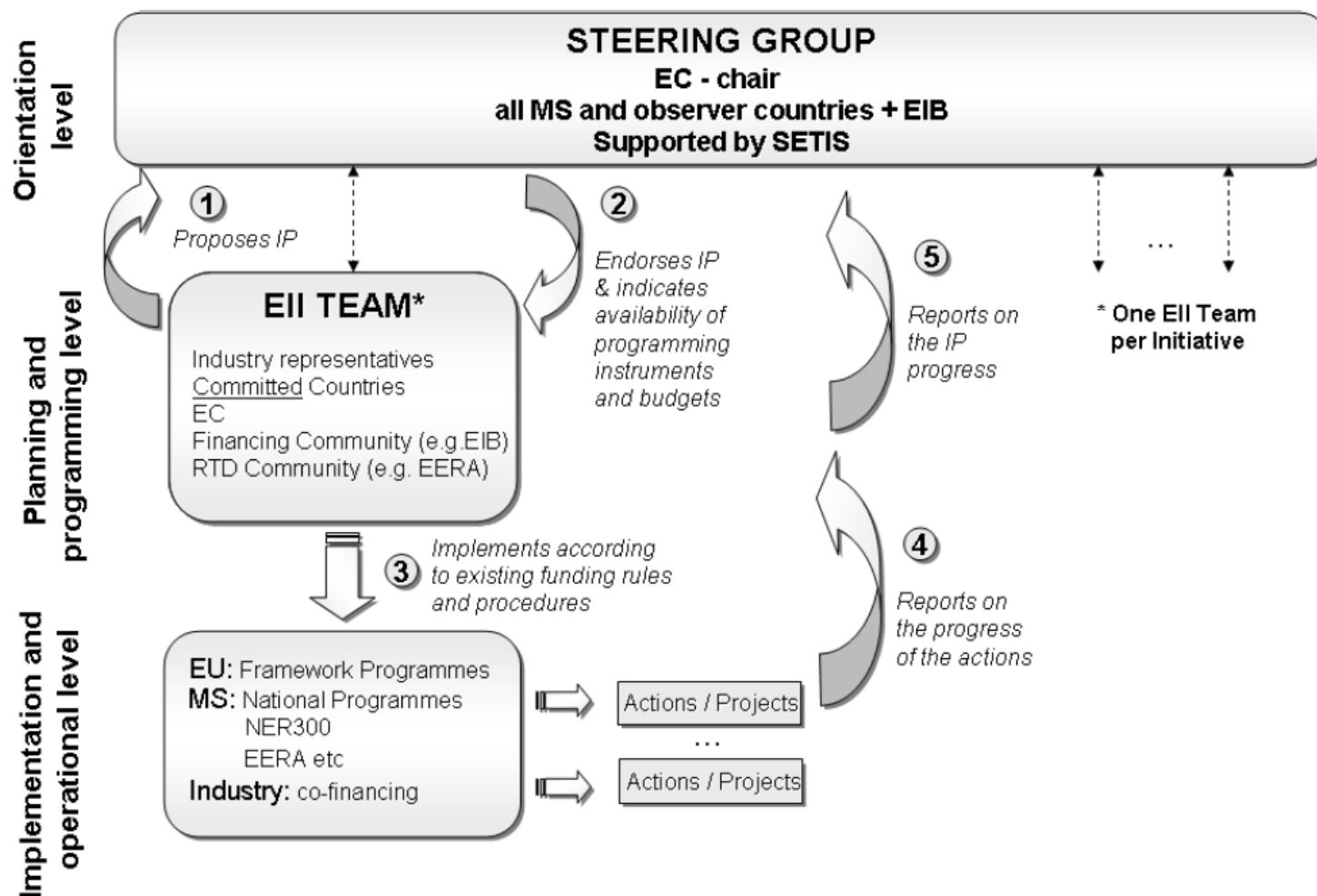


## The SET-Plan (III)

- ☐ SET-Plan Ells have been published by the European Commission in 2009 (COM(2009 519)
- ☐ Four of them have been officially launched at the Madrid SET-Plan conference in June 2010 (in the framework of the Spanish Presidency of the EU)
- ☐ Ells that have been launched are now being implemented
- ☐ Ells concern the 2010 – 2020 period and their budgets will be covered by both the private sector (relevant industries) and public authorities (at EU and national level)
- ☐ The implementation of Ells therefore requires a perfect coordination of EU and national instruments and policies, which was never attempted before



# SET-Plan Industrial Initiatives - Governance







## SET-Plan Industrial Initiatives – Funding

- Ells will be funded by coordinating all relevant EU and national funding schemes:
  - FP7 / FP8
  - Intelligent Energy Europe Programme
  - EEPR
  - National schemes (including ERANET+ and SET-Plan Spearhead Projects)
  - Structural Funds
  - ETS / NER300



## SET-Plan Industrial Initiatives - Impact

### □ Positive impact of Ells will be the following:

- Better coordination of EU and national funding schemes and policies
- More effective use of public money
- Alignment of public funds with the real needs of relevant low-carbon industries and R&D communities
- Clarification of the development trajectory of low-carbon technologies over the 2010 – 2020 period
- Acceleration in the development and deployment of low-carbon technologies by a better support of relevant R&D actions

# Open Days

**Roundtable 1 – Research and testing  
infrastructures for the offshore RES sector**

**Offshore RES funding: What are the major trends  
at the EU level?**

Niels Vinther  
Alliance for Offshore Renewables  
[nv@greenoffshore.dk](mailto:nv@greenoffshore.dk)

# The Framework programme: exploring the offshore synergies

Activity/ Area	Topics called	Funding Schemes
<b>ACTIVITY ENERGY.2: RENEWABLE ELECTRICITY GENERATION</b>		
<b>AREA ENERGY.2.3: WIND</b>	ENERGY.2011.2.3-1: Demonstration of innovative off-shore wind electricity generation structure	Collaborative Project with a predominant demonstration component
	Energy.2011.2.3-2: Development of design tools for Offshore Wind farm clusters	Collaborative Project
<b>ACTIVITY ENERGY.7: SMART ENERGY NETWORKS</b>		
<b>AREA ENERGY 7.3: CROSS CUTTING ISSUES AND TECHNOLOGIES</b>	ENERGY.2011.7.3-2: Storage and balancing variable electricity supply and demand	Collaborative Project with a predominant demonstration component
<b>ACTIVITY ENERGY.10: HORIZONTAL PROGRAMME ACTIONS</b>		
<b>AREA ENERGY.10.1: JOINT CALL 'THE OCEAN OF TOMORROW' - JOINING RESEARCH FORCES TO MEET CHALLENGES IN OCEAN MANAGEMENT</b>	OCEAN.2011-1: Multi-use offshore platforms	Collaborative Project (large scale integrating project).
	OCEAN.2011-4: Knowledge-base and tools for regional networks of MPAs, integrated management of activities together with assessment of wind energy potential in the Mediterranean and the Black Sea	Collaborative Project (large scale integrating project) for specific cooperation actions (SICA) dedicated to international cooperation partner countries
<b>AREA ENERGY.10.2: OTHER HORIZONTAL ACTIONS</b>	ENERGY.2011.10.2-1: Pilot International Researcher Exchange in the field of energy research (US and Japan)	Support for training and career development of researchers
	ENERGY.2011.10.2-4: Supporting the coordination of national research activities of Member States and Associated States in the field of OCEAN energy (ERA-NET)	ERA-NET

# Introduction

- Financing instrument managed jointly by the European Commission, European Investment Bank and Member States
- 300 mio allowances
- Funding based on saved carbon emission allowances

# Basics

- Only renewable energy generation (electricity, heat & fuel).
- Innovative, excluding incremental innovation
- Sufficiently mature for pre-commercial demo (last step before commercialisation, often after validation in pilot plant)
- Need to be demonstrated at large scale
- No upstream technologies (gas and oil)
- No deployment
- No repetition of demo already completed /underway somewhere else
- No niche applications

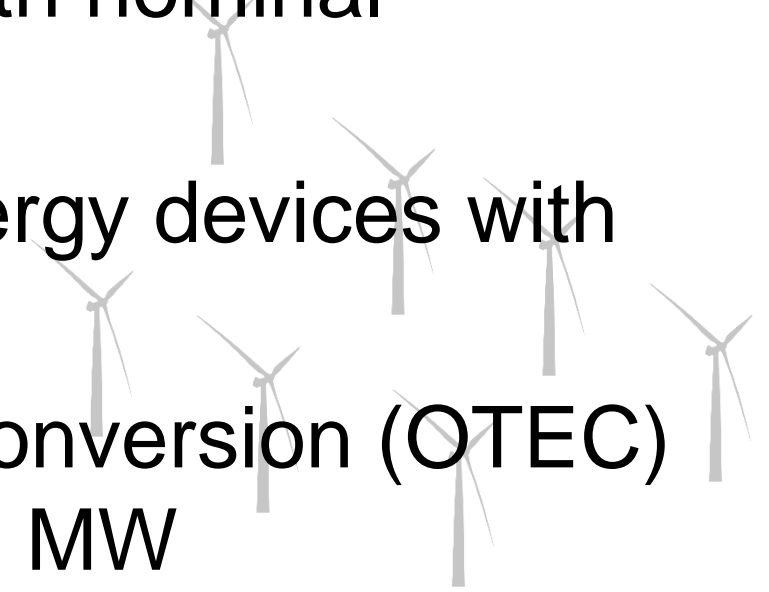
# Offshore renewables related calls

## Wind

- Off-shore wind (minimum turbines size 6 MW) with nominal capacity 40 MW
- Off-shore wind (minimum turbines size 8 MW) with nominal capacity 40 MW
- Off-shore wind (minimum turbines size 10 MW) with nominal capacity 40 MW
- Floating off-shore wind systems with nominal capacity 25 MW

# Offshore renewables related calls

## Ocean

- Wave energy devices with nominal capacity 5 MW
  - Marine/tidal currents energy devices with nominal capacity 5 MW
  - Ocean thermal energy conversion (OTEC) with nominal capacity 10 MW
- 



# Info on NER300

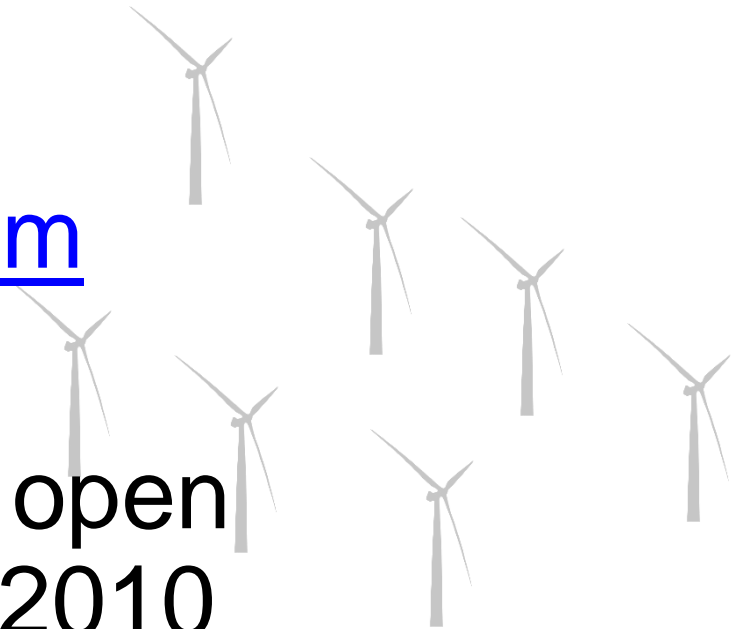
<http://www.ner300.com/>

Greg Arrowsmith

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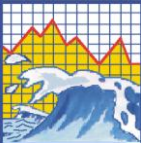
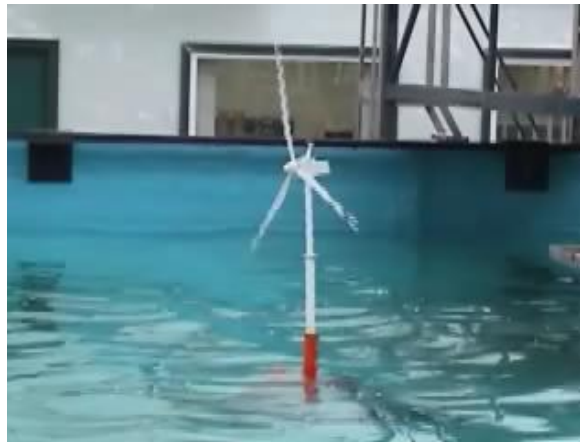
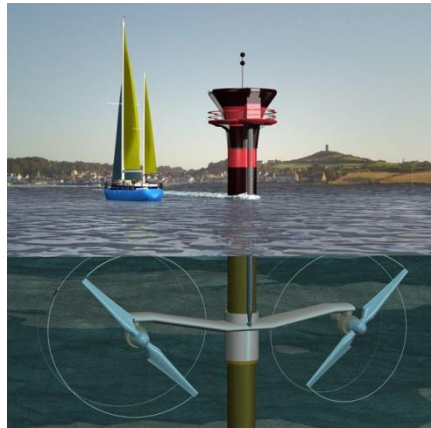
First call is expected to open  
beginning of October 2010



# MaRINET

Marine Renewables Infrastructure  
Network for Energy Technologies

**Dr Raymond Alcorn**  
Coordinator UCC

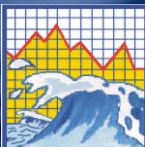


# Background

- Call topic INFRA-2010-1.1.23, Deadline 3 Dec 2009, I3 Proposal
- Bring together **existing** state of the art research infrastructures to support the efficient provision of **essential research services**, in the research topic **Offshore Renewable Energy Devices**.

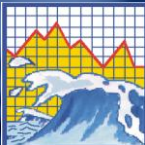
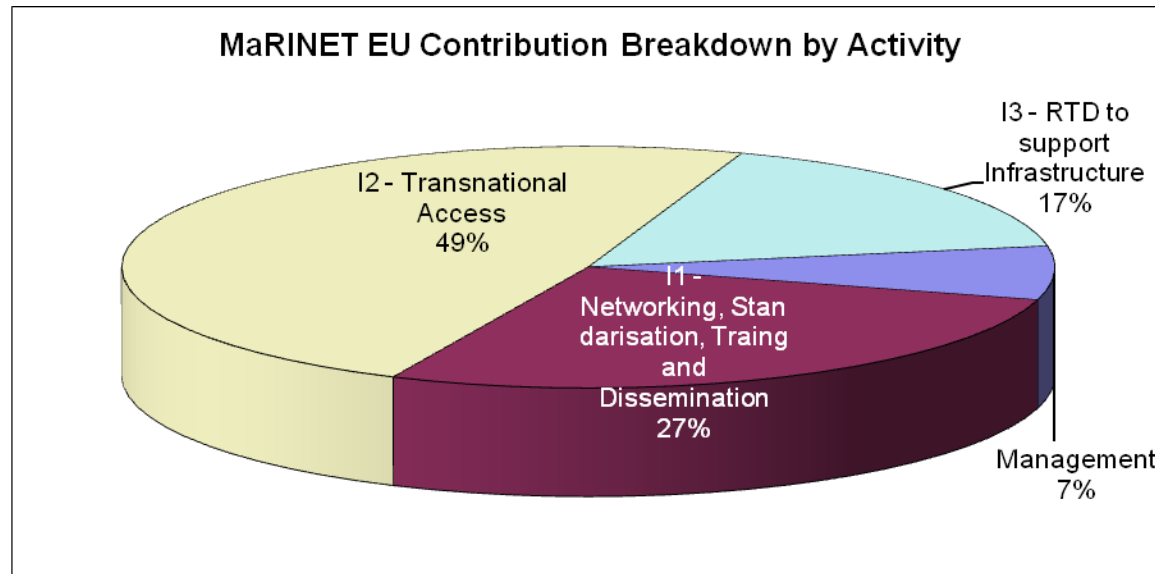
→ OFFSHORE WIND, WAVE, TIDAL

- 14.5/15 evaluation, In Negotiation near completion
- €9m over 4 years
- 28 Partners, 12 countries
- 49 Infrastructures
- Linked to HYDRALAB and DERRI
- Linked with EWEA and EUOEA

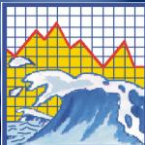
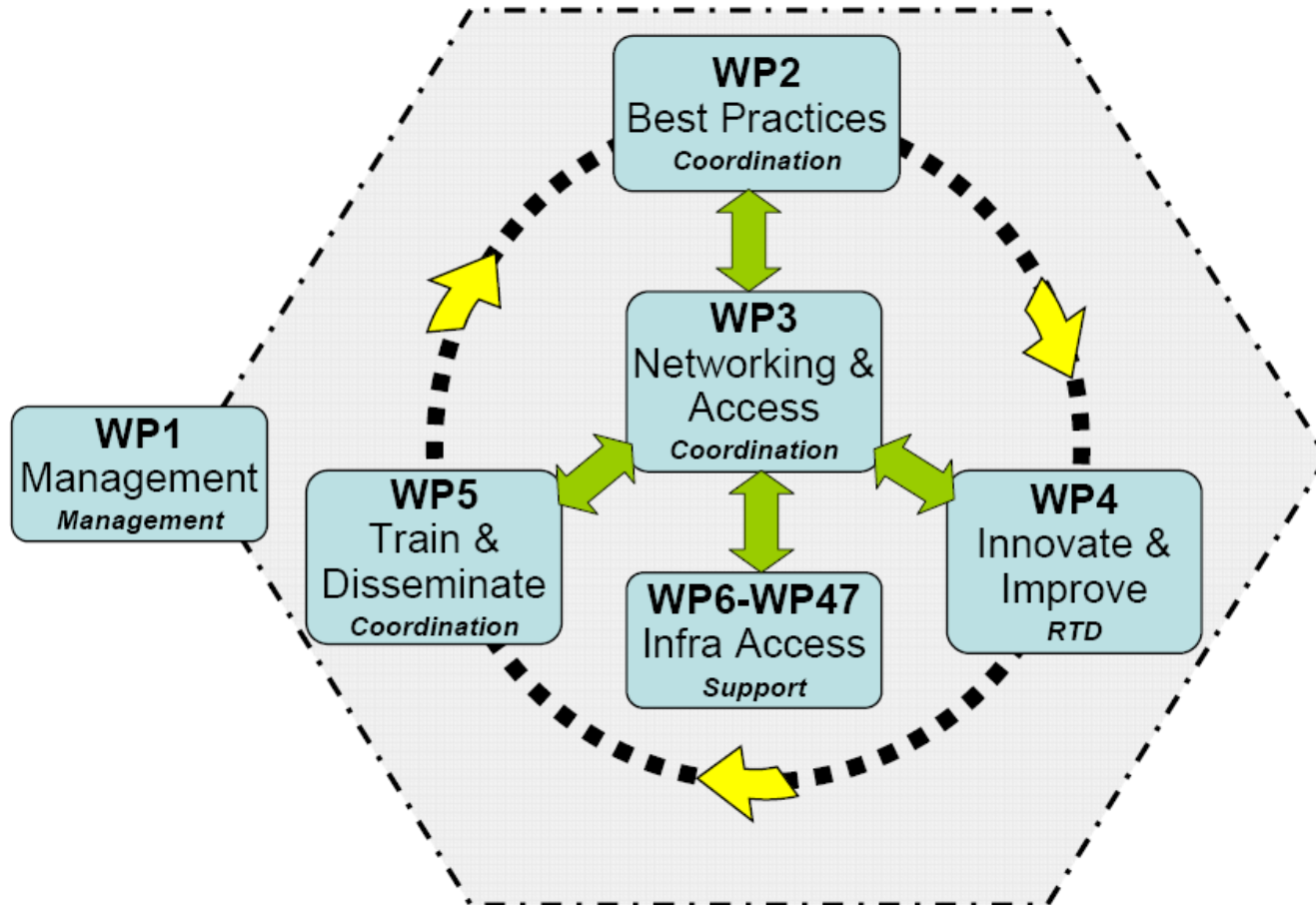


# I3 Proposal Breakdown

- I1 – Coordination
- I2 – Support
- I3 – RTD

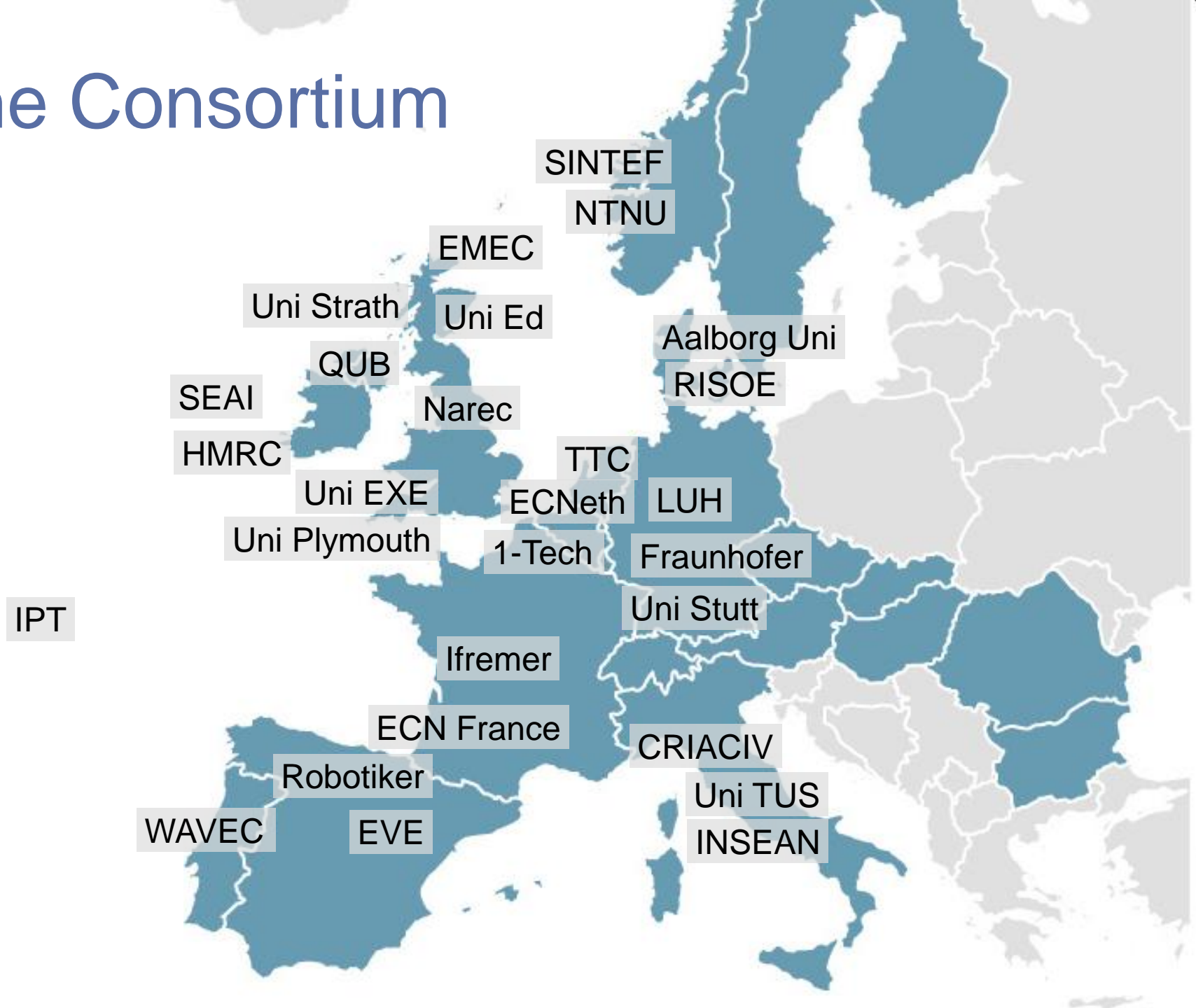


# Our 13 Breakdown



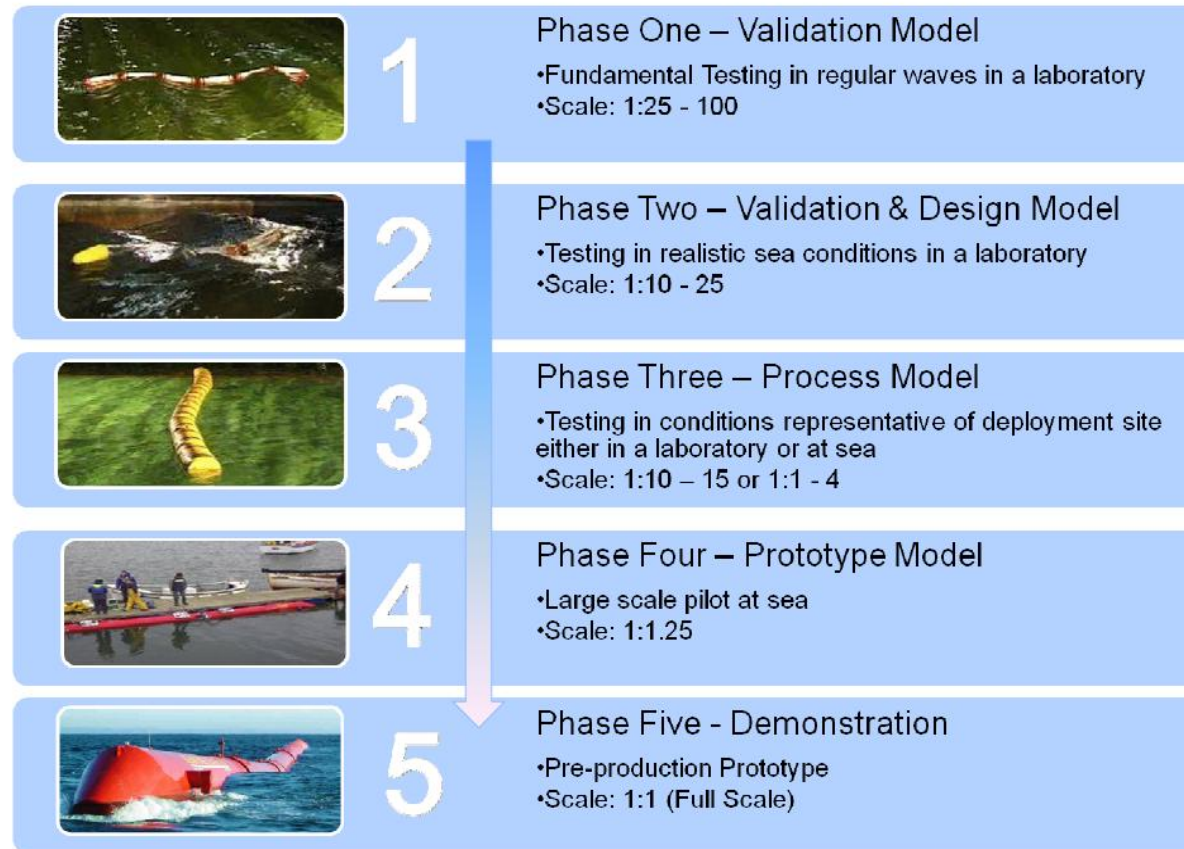


# The Consortium



# Driver for the Research Infrastructure

## ■ Technology Readiness Levels

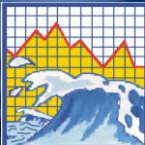


Scale	Structural/Hydrodynamics		Electrical/PTO/ components	Environmental / Databases
	<i>Wave/Wind</i>	<i>Tidal/Wind</i>		
<b>Small Lab</b>	<ul style="list-style-type: none"><li>○ AAU</li><li>○ HMRC – <i>wind wave</i></li><li>○ Edin – <i>small wave</i></li><li>○ QUB – <i>shallow sea water wave tank</i></li><li>○ CRIACIV – <i>small boundary layer wind tunnel</i></li></ul>	<ul style="list-style-type: none"><li>○ Strat – <i>tidal towing tank</i></li><li>○ RISOE – <i>Current flume (with carriage)</i></li><li>○ Uni Stutt – <i>Laminar wind tunnel</i></li></ul>	<ul style="list-style-type: none"><li>○ Fh IWES</li><li>○ HMRC</li><li>○ Robotiker – <i>small rotary rig</i></li><li>○ SINTEF – <i>Grid integration /simulation</i></li><li>○ Uni Stutt – <i>Low head turbine test rig</i></li></ul>	N/A
<b>Large Lab</b>	<ul style="list-style-type: none"><li>○ Nantes - <i>wind wave</i></li><li>○ IFREMER – <i>deep sea water basin</i></li><li>○ NaReC – <i>wave flume (marine test site)</i></li><li>○ LUH – FZK – <i>Large wave flume in Hydralab proposal</i></li><li>○ INSEAN - <i>long wave flume with towing</i></li></ul>	<ul style="list-style-type: none"><li>○ IFREMER – <i>recirculation channel with waves</i></li><li>○ INSEAN – <i>Recirculation channel hi flow hi volume</i></li></ul>	<ul style="list-style-type: none"><li>○ NaREC – <i>grid integ. and 3MW rotary rig</i></li><li>○ IRFEMER – <i>materials environmental testing</i></li><li>○ RISOE – <i>Power test lab 30MW offshore Wind</i></li></ul>	N/A
<b>Small Site</b>	<ul style="list-style-type: none"><li>○ AAU Nissum</li><li>○ SEI OEDU - <i>Galway Bay test site</i></li></ul>	<ul style="list-style-type: none"><li>○ QUB –<i>Strangford Tidal site</i></li><li>○ T.T Centre Neth</li></ul>	<ul style="list-style-type: none"><li>○ UNEXE – <i>moorings</i></li><li>○ EVE - Mutriku</li></ul>	<ul style="list-style-type: none"><li>○ SEI MI – <i>wave &amp; tidal currents site data</i></li><li>○ AAU Nissum</li></ul>
<b>Large Site</b>	<ul style="list-style-type: none"><li>○ EVE – <i>Biscay Marine Platform</i></li><li>○ SEI OEDU - <i>Belmullet test site</i></li><li>○ EMEC</li></ul>	<ul style="list-style-type: none"><li>○ EMEC</li></ul>	<ul style="list-style-type: none"><li>○ Fh IWES</li><li>○ Wavec – <i>Pico plant Azores</i></li></ul>	<ul style="list-style-type: none"><li>○ QUB – <i>Strangford Data</i></li><li>○ EMEC</li><li>○ RISOE – <i>Mobile offshore wind measuring</i></li><li>○ RISOE - <i>Offshore Wind Database</i></li><li>○ ECNeth - <i>Offshore environmental database</i></li><li>○ Uni Stutt – <i>Offshore nacelle LiDAR</i></li><li>○ UoP – <i>HF Radar for offshore wave/ current</i></li></ul>



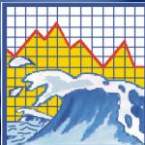
# Transnational Access

- The applicants cost of accessing the facilities will be paid by EU
- Travel & subs up to approx €1100 per week will be paid
- 6 Calls over the 4 years
- Research and Commercial (1-tech will facilitate Industrial access)



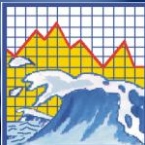
# Training courses

- Experimental Testing in tanks and flumes
- Monitoring of pilot plants and zones
- Instrumentation of Offshore Devices
- Modelling of Electrical Equipment
- Modelling of Air Turbines
- Offshore wind measurement techniques
- Remote Sensing Offshore
- Wind interaction on offshore structures



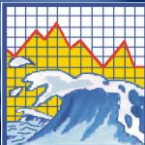
# Benefits to Regions – Consortium Members

- Raising profile of Sector
- Access and Networking with expert partners
- Training of own staff through exchange.
- Access to disseminated material
- Exposure and access from all parts of Research and Industry.
- Improves use of existing facilities
- Brings in new clients, new partners and sows seeds for new projects and increased funding



# Benefits to Regions - Getting Involved

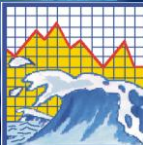
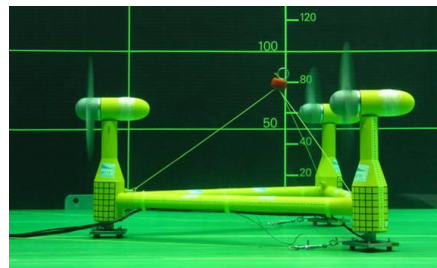
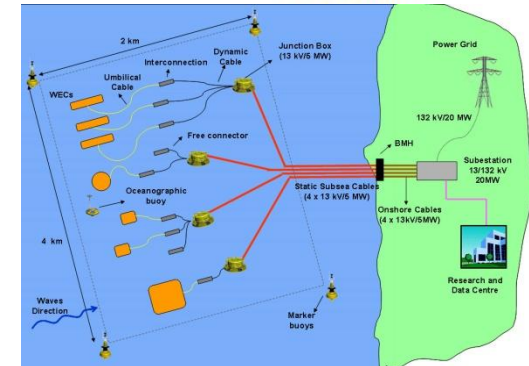
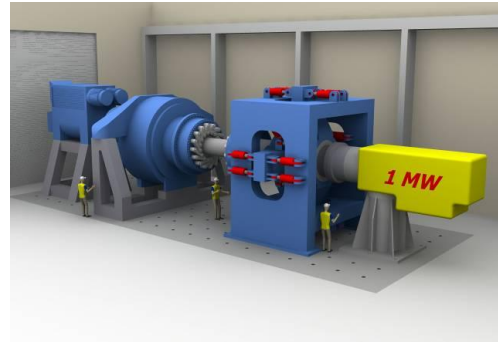
- Application to access any of the offered infrastructures
- Participation in many of the Networking events
- Participation in online forum, networking
- Dissemination events, EWEA , EUOEA
- Attending Training Courses – these are grant aided for students and postgrads



# MaRINET

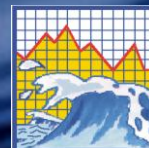
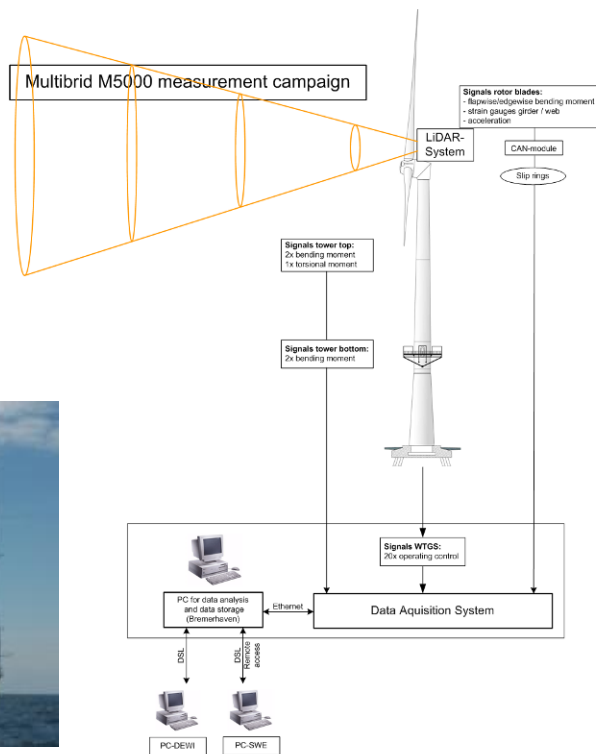
## Marine Renewables Infrastructure Network for Energy Technologies

- Coordinated by HMRC and in Negotiation Phase
- Consortium of 28 Partners offering 49 Infrastructures
- Wave Tidal and Offshore Wind
- Systems and components (eg PTO)
- All scales of facilities from model testing to full scale
- Infrastructure Access cost will be paid for by EU to the User (eg a developer)





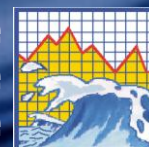
# MaRINET





## Marine Renewable Integrated Application Platform

- 17 Partners from 12 Countries
- Objective
- Combining deep offshore wind with wave/tidal
- System integration and cost reduction aims
- Develop and test New designs and concepts of MRE platforms
- Establish a set of criteria transparent criteria for multi-purpose platforms for marine renewable energy (MRE) platforms
- Includes likes of Technip, Statoil Petroleum, HMRC, Uni Edinburgh, DONG Energy, Fraunhofer



# **The EERA Joint Programme on Wind Energy**

**Erik Lundtang Petersen**  
**Wind Energy Division**  
**Risø DTU**

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# Ambition/vision of the Joint Programme

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The EERA vision for the joint programme on wind energy is

- to establish the scientific–technical *medium to long term* research strategy to support the Technology Roadmap's activities on *wind energy* and
- on basis of this, to perform the necessary scientific research.

The vision calls for all the EERA institutions and associated partners

- to align their research in wind energy topics which influence the use and deployment of wind energy and
- perform the research coordinated and structured in medium to long-term research programmes with shared research facilities.

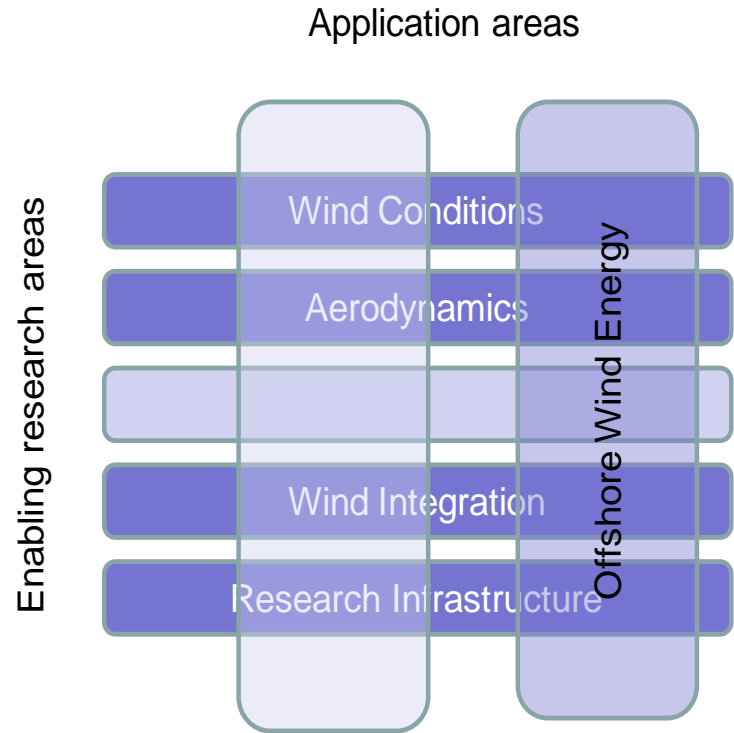
The overall objective is

- to produce scientific results on the highest and recognized international level to be used by industry, communities, member states and the international scientific community.

# General structure

The joint programme is coordinated by Risø DTU and comprises the following 5 sub-programmes:

- Wind Conditions. Coordinated by Risø DTU in Denmark.
- Aerodynamics. Coordinated by ECN in the Netherlands.
- Offshore Wind Energy. Coordinated by SINTEF in Norway.
- Grid Integration. Coordinated by FhG IWES in Germany.
- Research Facilities. Coordinated by CENER in Spain.



# Main activities and outcomes

---

## **Established in 3 phases:**

1. An immediate joint programme is initiated with shared results from ongoing programmes. Parallel a detailed survey of the research activities in the identified fields; a gap-analysis at the EERA partners and on a global scale providing the background for the activity in next phase
2. Formulation of a detailed joint programme with a concentrated effort towards removing the barriers that prevent or impede close research cooperation.
3. Finally launch of the full joint programme.

## **Basic structure:**

1. Theory and models,
2. data acquired from well focused experiments,
3. verification of theory and models by the data and
4. development of new generic technology concepts.

The participants have agreed on organizing themselves with shared model developments, shared databases and commonly developed schemes for verification as well as sharing research facilities.

# Offshore Wind Energy sub-programme

- Development of integrated numerical design tools for large deep offshore wind turbines; a database with measurements for validation of tools
- Characterization and interaction of wind, wave and current as input for assessment of site conditions and developing standard design load cases for large deep offshore wind turbines.
- Development of numerical tools for assisting decisions on offshore grid development and wind farm electric design, in particular connection to HVDC transmission.
- Development of numerical tools for predictive maintenance (component degradation); a database with operational and failure data for validation of tools.
- Identification and assessment of novel concepts for offshore wind turbines and substructures (bottom-fixed and floaters) to pin-point cost-effective solutions for deep-sea wind.



# Research Facilities sub-programme

- Inventory of EERA research facilities, which are or could be conditionally accessible for all EERA partners.
- Data base of projects carried out by the partners in the last ten years, utilizing the existing research infrastructures.
- Identification (gap-analysis) of the necessary research facilities which are either non-existence or not available for the EERA partners.
- Modes of agreements on the use of partners' facilities.
- Interaction with the other sub-programmes in order to identify new joint research projects that could be developed using the research facilities. (Windscanner EU)



# Partnership and resources

The Joint Programme is open to all research organizations which will commit a significant effort of the order of 3-5 man-years per year in one or more of the sub-programmes.

Participants Name	Country	Scientists	PostDocs, PhDs and visiting scientists	Technical administrative staff
Risø DTU	DK	70	28	21
ECN	NL	60	4	20
CRES	HE	14	5	7
CENER	ES	57	3	25
CIEMAT	ES			
FhG IWES	DE	70	15	15
LNEG/INETI	PT	22	12	6
UoP	PT	23	5	17
SINTEF	NO	35	25	
VTT	FI	35	1	10
UoS	UK	25	50	5

Partners' human resources in man-years available primo 2010 with a potential for alignment in the joint programme

Participants Name	Country	Human Resources (man-years)
Risø DTU	DK	24
ECN	NL	13
CRES	HE	10
CENER	ES	15
CIEMAT	ES	3
FhG IWES	DE	19
LNEG/INETI	PT	16
UoP	PT	3
SINTEF	NO	10
VTT	FI	6
UoS	UK	5,5

Estimate of human resources in the 5 sub-programmes for 2010

## Next steps

---

- Develop a detailed governance structure for the Joint Programme on Wind Energy
- Agreements with Non-ExCo joint programme partners (Declaration of support)
- Experience developed by aligning existing research with national funding
- Scientific workshops: surveys of research activities, competences and facilities
- Establish platform for communication with the EC and national research programmes and with industrial fora and initiatives
- Medium-to-long-term research strategy formulated on wind energy
- Detailed scientific programme 2011-2014 formulated and launched

Offshore Renewables Event – 4th October 2010

List of participants: Roundtable 1 - Research and testing infrastructures for the offshore RES sector

Agasoster	Bodil	European Affairs Consultant	Stavanger Region European Office
Alcorn	Ray	Research Manager	Hydraulics and Maritime Research Centre
Andreasen Wolf	Ghita	Director	South Denmark European Office
Barker	Arthur	Chair	Regional Climate Change Partnership
Carre	Florian	Project manager	Pole Mer
Chan	Jo	Seaward Innovations	Newcastle Science City
Egner	Craig	Senior Policy Adviser: Energy and Environment	Scottish Government office
Gagliardi	Filippo	TPWind Project Manager	EWEA
Hanssen	Jan Erik	Director	1-Tech, Brussels
Inigo	Losada	Director of Environmental Hydraulics Institute (IH Cantabria)	Environmental Hydraulics Institute (IH Cantabria)
Jamieson	Ron	Resource Centre for Innovation & Design	Newcastle University
Kofoed	Jens Peter	Associate Professor	Aalborg University Dep. Civ. Eng. Wave Energy Research Group
Madsen	Bjørn		MET Centre
Martin Raba	Mar	EU Policy Advisor for Regional Development Agency of Cantabria	Cantabria Regional Representation Office
Petersen	Erik Lundtang	Research Professor - Wind Energy Division	Risø DTU
Peyhorgue	Stéphane		Espace Interrégional Européen
Ratnayeke	Yasa		Aberdeen City Council
Schroder Hansen	Helle	Project Manager	Aalborg University Dep. Civ. Eng. Wave Energy Research Group
Skofteland	Birte Marie	Vice President - RES	ONS Foundation (Offshore North Sea Fair)
Torvestad	Cathrine	Director	Aqua Energy Solutions
Tramontana	Tea	Head of Press	Lindoe Offshore Renewables Center
Tyler	Sarah	People & Places Development Manager	Local Government Yorkshire & Humber
Vinther	Niels	Research Consultant	Alliance for Offshore Renewables
Walker	Alan	Business Manager Technology Centres	Narec
Ward	Karl	Business development	Newcastle University



# Education of Offshore Technicians.

A Common Approach to technical Training.

October 4<sup>th</sup> 2010 Brussels.

A new industry then why use old Training Methodologies?

The Wind Industry prides itself on cutting edge technologies, exciting partnership agreements, innovative logistical techniques, a strong ethos on team work.....

Yet all very secretive but all want the same

An efficient, dynamic and safe work force that can work on any farm in any sea without the need to retrain to work on different projects.

Then why are so many training institutes trying to develop similar training modules with different standards using old delivery methods?



Educational Partners from Power Cluster identified these problems several years ago and for the past two have tried to reduce some of those problems through:

Technician programmes.

Higher Technician programmes.

BSC training programmes.

Bespoke training initiatives.





### Typical Technician training Programme:

- Passport to Safety.
- Health and Safety (Turbine Specific).
- Sea Survival & Transfer.
- Working and Rescue from Height.
- First Aid at Work.
- Team Building.
- Supply Chain Management.
- Environmental Awareness.
- Mechanical Engineering.
- Electrical Engineering.
- Data Transfer and Control Techniques.
- Blade Technology and Repair.
- Lifting Hooking and Strapping Techniques.





How do we achieve a standard and this common goal?

Effective Leadership from a trade body i.e. EWEA.

Closer collaboration between all effective partnerships rather than the one qualification fits all approach.

A common standard designed, agreed recognised and implemented by all of the industry

Qualifications which are designed and updated by the industry for the industry.

Can we achieve this goal?





## The Windskill project (2006 – 2009)

- Designed to **overcome critical non-technical barriers** to the growth potential of wind energy.
- To produce a European **qualification** for installation and maintenance staff to remove some of the barriers to achieving the Union's RES targets.
- The **industry-based network initiative** led to the development of a **European Qualification Profile** for the key onshore and offshore process assignments.
- Has allowed the development of an appropriate **modularized curriculum** and **pilot training courses** to meet these requirements.
- Finally, the project's full circle will include **Europe-wide recognition** and adoption of the established minimum standards via the extension of the network."



Thank You.

Ian Fisher.

Project Manager Renewable Energies.

ian.fisher@northland.ac.uk

Northumberland College.

Kirkley Hall Campus.

Ponteland

NE20 0AQ

01670 841229



**PATCH – A Channel and North Sea ports perspective on future skills  
for the Offshore Renewable Energy Sector**

OPEN DAYS partners seminar – North of England Brussels Office

Monday 4th October, 2010

Wim Stubbe – Port of Oostende

# What is PATCH?



**PATCH is an Interreg IVA 2 SEAS EU Cross-Border Cooperation Programme 2007/2013 project worth €9 million**

**It aims to create an attractive, accessible and competitive cross-border region, considering the fact that the logistic and maritime sector is important for the economy of these regions, it is even more important to handle these questions, related to these sectors.**

## **Objectives**

- **To strengthen the logistic functionality**
- **To take account of the fundamental challenge of the economic crisis**
- **To develop of new maritime activities and markets,**
- **To strengthen the cross-border efficiency and operation ability of the cooperation between the ports in the Channel area and the Southern North Sea.**
- **To improve the quality of the management of the participating ports through increasing shared capacity, internal inter-modality, economic development, employment and mobility**
- **To improve the diversification of the economic activities in the ports and the economic cross-border cooperation**
- **To implement pilot actions**
- **To strengthen and the improve the logistic and economic development of the cross-border regions to fight the recession**

# Adapting to future Marine Industries



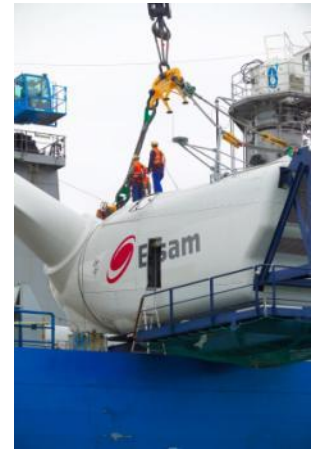
Health and Safety



Construction  
and  
Installation



Logistics



Operations and  
Maintenance



# Challenges ...



- Massive scale
- Supply chain – vessels, equipment, skills
- Further offshore
- Deeper water
- Technology/approach step change required for offshore?
- Increased cost & investor risk
- Operations & Maintenance strategy rethink needed
- Competition – European/Global market
- Optimise onshore fabrication/assembly
- Improve offshore turbine reliability (less visits/downtime)



# Opportunities...



**Development Services** – environmental surveys, EIA, site technical surveys, front end engineering (civil, electrical), land acquisition, legal support, public relations, fisheries liaison



**Construction** - supply of equipment (turbines, transformers, switchgear, foundations, cables, control systems), installation, construction project management, port facilities, main vessels, support vessels, logistics / transport, surveys, onshore civil & electrical works, directional drilling, onshore O&M facility construction



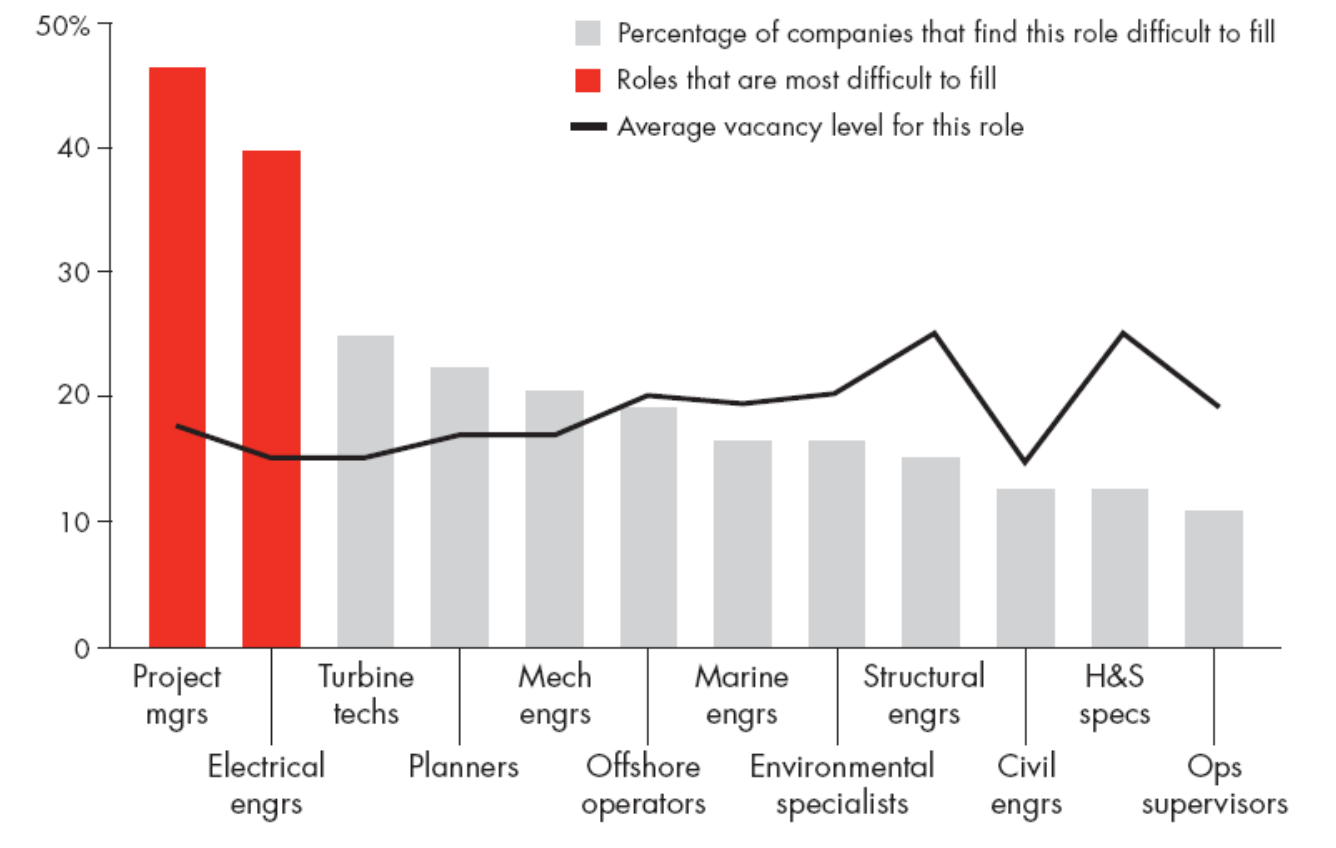
**Operations & Maintenance** – port facilities, operations base, maintenance contracts, turbine technicians, component supply/repair, vessels, crews, services ..



# Skills



**Figure 6: Some specialist roles are particularly challenging to fill**



Source: Industry survey

# Planning the Future

- Allocation of land at the Port
- Leasehold negotiations
- Local sourcing of contracts
- Shared Links to learning new skills
- Support for community environmental projects
- Financial planning



# PATCH's perspective on skills



1. Build on projects such as Windskills - <http://www.windskill.net/partners.html> and POWER - <http://www.offshore-power.net>
2. Focus on both basic and higher level skills
3. Links with local institutions and using partner strengths
4. Engineering and Health and safety skills



# Thank you



**Wim Stubbe**  
**Business Development – Port of Oostende**



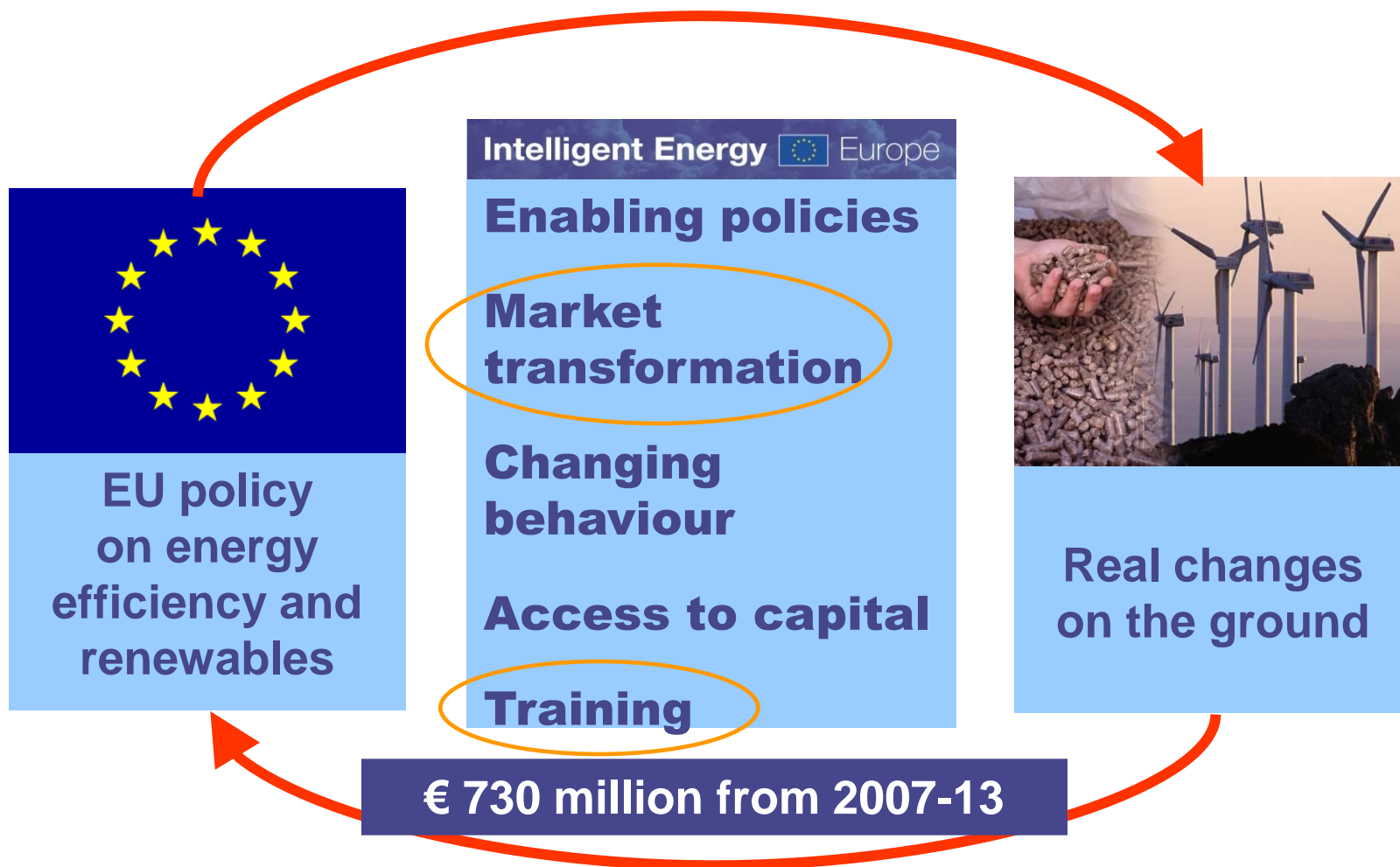
## **Skills gap in offshore RES: challenges for Intelligent Energy Europe Programme**



Dana Dutianu,  
Project Officer,  
**Executive Agency for Competitiveness and Innovation – EACI**

Brussels, 04 October 2010

# IEE: TURNING POLICY INTO ACTION



<http://ec.europa.eu/intelligentenergy>



# Policy background

## The 'RES directive' (2009/28/EC)

- Mandatory national targets by 2020
- National Renewable Energy Action Plans
- Flexibility between Member States
- Reduction of administrative and regulatory barriers, grid issues, etc;
- Requires improvements in provision of information & training;

## Communication on Offshore Wind (COM(2008) 768 final)

- **OWE can and must make a substantial contribution to 2020 objectives** through a very significant increase
- Member States need to use the **National Action Plans to spell out clearly their ambitions for offshore wind** and take the necessary action.
- Commission commits to
  - seek to **facilitate regional cooperation** on offshore energy site-and grid planning between Member States, and relevant stakeholders;
  - encourage the Members States to implement **maritime spatial planning**

# 2020 targets in National Renewable Energy Action Plans

	Offshore wind		Tide, wave, ocean	
	MW	GWh	MW	GWh
<b>Belgium</b>	Not published yet			
<b>Denmark</b>	1 339	5 322	0	0
<b>France</b>	6 000	18 000	380	1150
<b>Germany</b>	10 000	31 771	0	0
<b>Greece</b>	300	672	0	0
<b>Ireland</b>	555	1 742	75	230
<b>Italy</b>	680	2 000	3	5
<b>Malta</b>	95	216	0	0
<b>Netherlands</b>	5 178	19 036	0	0
<b>Portugal</b>	75	180	250	437
<b>Spain</b>	3 000	7 753	100	220
<b>Sweden</b>	182	500	0	0
<b>UK</b>	12 990	44 120	1 300	3950
<b>TOTAL</b>	<b>40 394</b>	<b>131 312</b>	<b>2 108</b>	<b>5 992</b>

- Commission is publishing the NREAPs as soon as they are received\* (21 received by 30 September)
- For offshore wind – 12 countries
- For waves / tides only 6 countries (France, Ireland, Italy, Portugal, Spain and UK) indicated developments by 2020

\* [http://ec.europa.eu/energy/renewables/transparency\\_platform/transparency\\_platform\\_en.htm](http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm)

# Provisions in the “Communication on Offshore Wind” (COM(2008) 768 final)

- In terms of skilled workers, installation vessels and other specialised resources, offshore wind at present competes unevenly with oil and gas production.
- However, with time **the common ground between offshore renewables and the oil and gas industry can be turned into an asset if the opportunities are seized in coastal areas to achieve a managed, gradual transition to new energies.**
- Many regions in Europe are already realising the potential for future jobs, growth and economic regeneration that lies in redeploying existing skills and resources from fisheries, shipbuilding and harbours in decline and other potentially relevant industry sectors.

**“EU programmes such as Intelligent Energy Europe and programmes under the Cohesion Policy are already being used to fund projects taking a proactive approach in the adjustment to renewables and supporting the development of offshore wind”**



# WINDSKILL

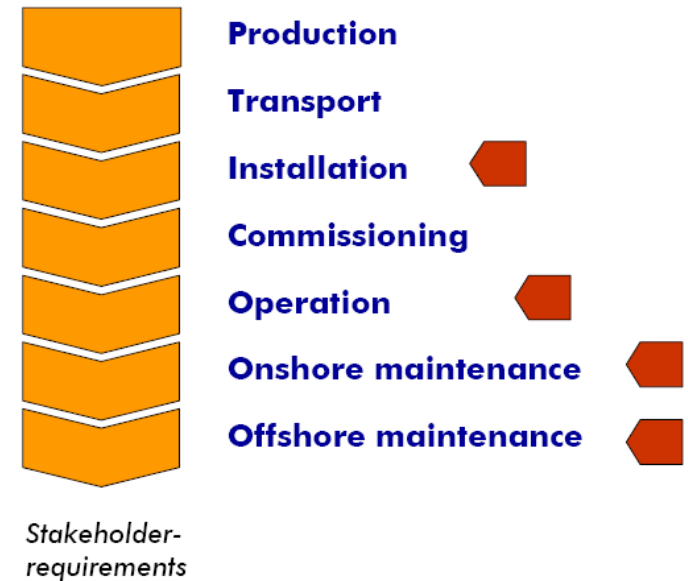
**‘Skills network for European wind energy’ (2006 – 2009)**

## Objectives:

- Set up an industry-based skills network for (on- and offshore) wind energy sector
- Assess job/task qualification requirements
- Develop a qualification standard for workers in the wind energy sector
- Implement the standard into:
  - an education concept
  - pilot training modules
- Get recognition and adoption of established European sector standards

**Development of European Qualification Profile for the key processes of the onshore and offshore industry**

*Process Chain*



**Coordinator: BWE German Wind Energy Association**

<http://www.windskill.net/>



**Intelligent Energy**  **Europe**

# GP WIND

## **‘Good practice in reconciling onshore and offshore wind with environmental objectives’ (2010 – 2012)**

- Address barriers to the deployment of onshore and offshore wind generation (including some recommendations for for wave and tidal energy)
- Bring together developers, regional and local government, environmental agencies and NGOs from differing countries to share experiences
- Recording and sharing good practice
- Develop a guide to good practice and a 'how to' toolkit, which will be used to facilitate deployment of renewable energy in support of the 2020 targets.



**Increasing social acceptance and commitment to adopt relevant good practice at regional / national level**

**Coordinator: Scottish Government**

8 regions involved from:

Scotland, Ireland, Spain , Greece, Italy, Norway, Belgium, Malta

**Thank you for your attention**





Offshore Renewables Event – 4th October 2010

List of participants: Roundtable 2 - Skills gap in the offshore RES sector

Archer	David	Strategic Director	Scarborough Council
Bastiman	Derek	Councillor	Scarborough Council
Callesen	Poul Arne	Head of Department	EUC Vest Denmark
Danson	Mike	Professor	University of the West of Scotland
Decramer	Ariane	Liaison Officer	VLEVA
Dutianu	Dana	Project Officer	EACI
Fisher	Ian		Northumberland College
Geert	Palmers		3E
Grindland Gustafsson	Tone	Opportunity Manager - the EU & International Relations	Greater Stavanger Economic Development
Jensens	Olaf Rye	Manager Development and Courses	EUC Vest Denmark
Kell	Gordon	South Humber Bank Development Manager	Lincolnshire Council
Luczak	Marcin		Fluid Flow Machinery Polish Academy of Science
Moen	Frank Emil	Development Manager	Dalane College
Norman	Rose	School of Marine Science and Technology	Newcastle University
Stubbe	Wim	PATCH project manager	Port of Oostende
Undheim	Aslaug M.	Principal	Dalane College

# Logistics and port planning for the offshore wind industry in Bremerhaven



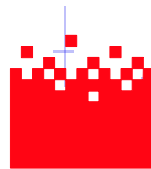
BIS Bremerhavener Gesellschaft für Investitionsförderung  
und Stadtentwicklung mbH  
Dr. Mathias Grabs

Brussels  
4th October 2010

# Offshore wind industry in Bremerhaven



AREVA Wind



WeserWind GmbH

Offshore Construction Georgsmarienhütte

PowerWind



Fraunhofer



Institut  
Windenergie und  
Energiesystemtechnik

WindMW

interface.group  
GmbH



mc | meteo | control |

# Offshore Windport Bremerhaven – manufacturer- and supplierpark





# Heavy load terminal Labradorhafen



Handling of REpower-machines for „alpha ventus“ at the heavy load terminal Labradorhafen

# Heavy load terminal Labradorhafen

## public terminal

### Westside

Labradorhafen:

100m x 16m

### Eastside

Labradorhafen:

175m x 15.5 to 26m

bearing capacity: 50 to





# Bremerhaven interim solution

## Containerterminal 1 in the north of the city



- for RWE Innogy from 2011 (Offshore windpark Nordsee Ost 1, 295 MW) and other companies
- 400 m containerpier with additional 17 ha space



# Offshore terminal Bremerhaven

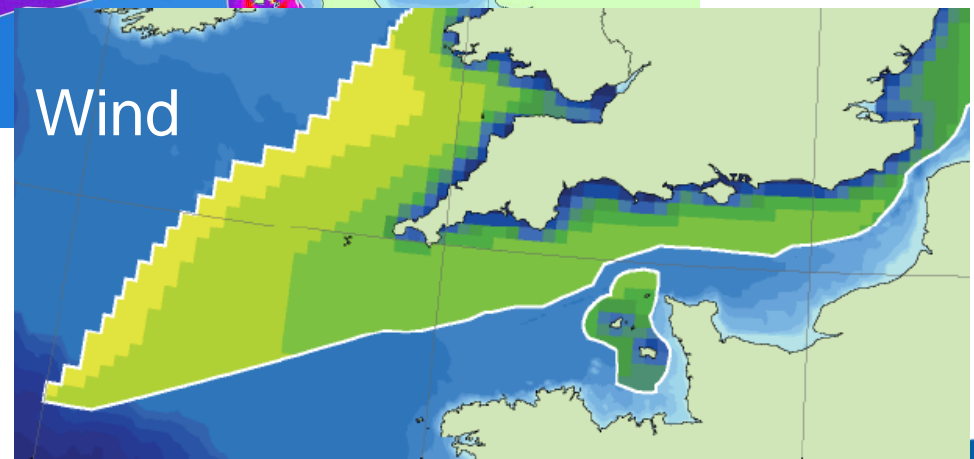
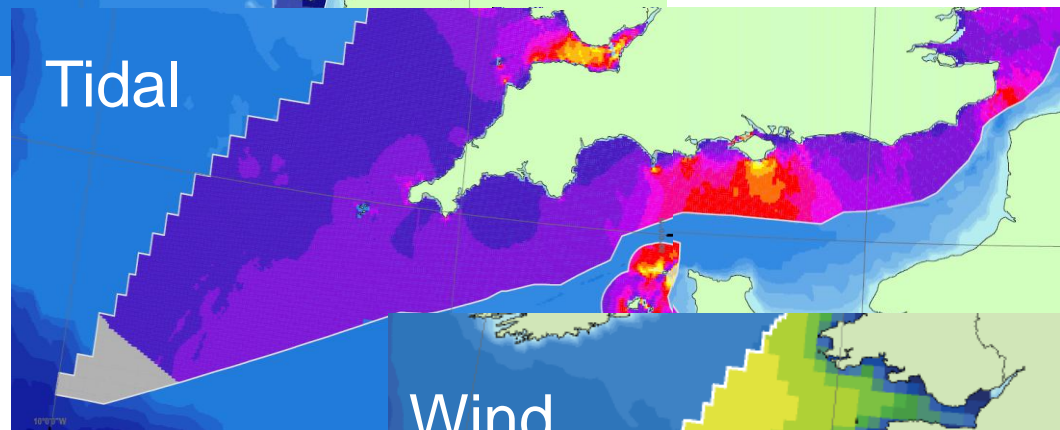
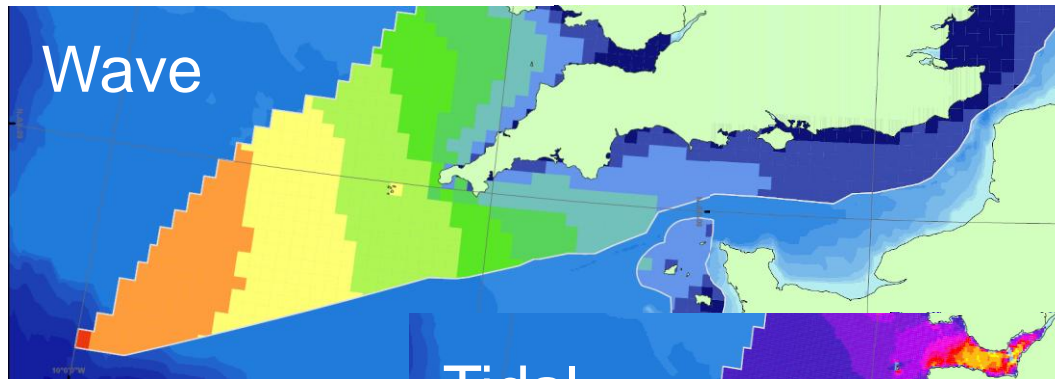
## Blexer Bogen – basic model



# Marine Energy Supply Chain Model

Nick Harrington, Head of Marine Energy

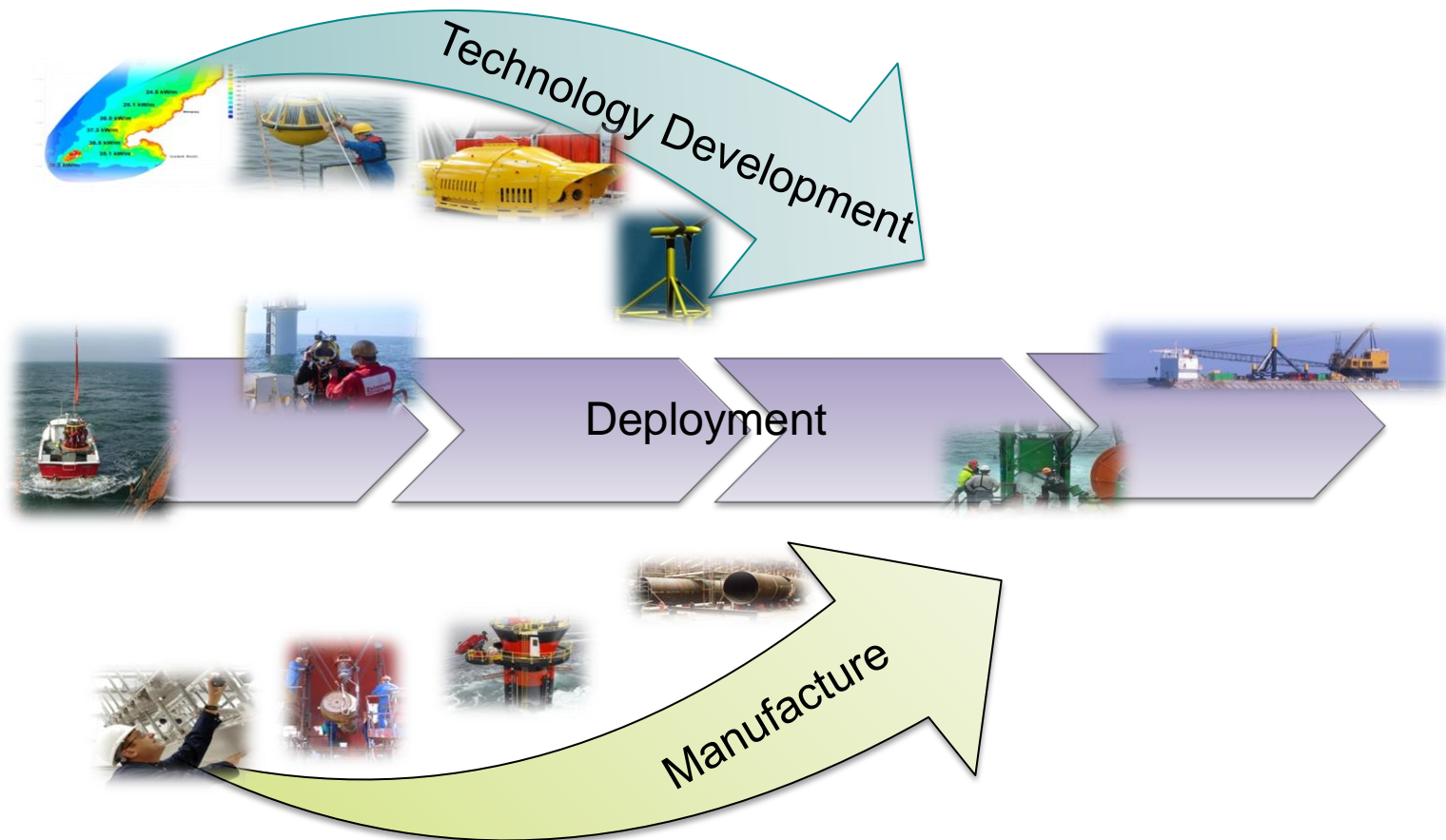
# Resources



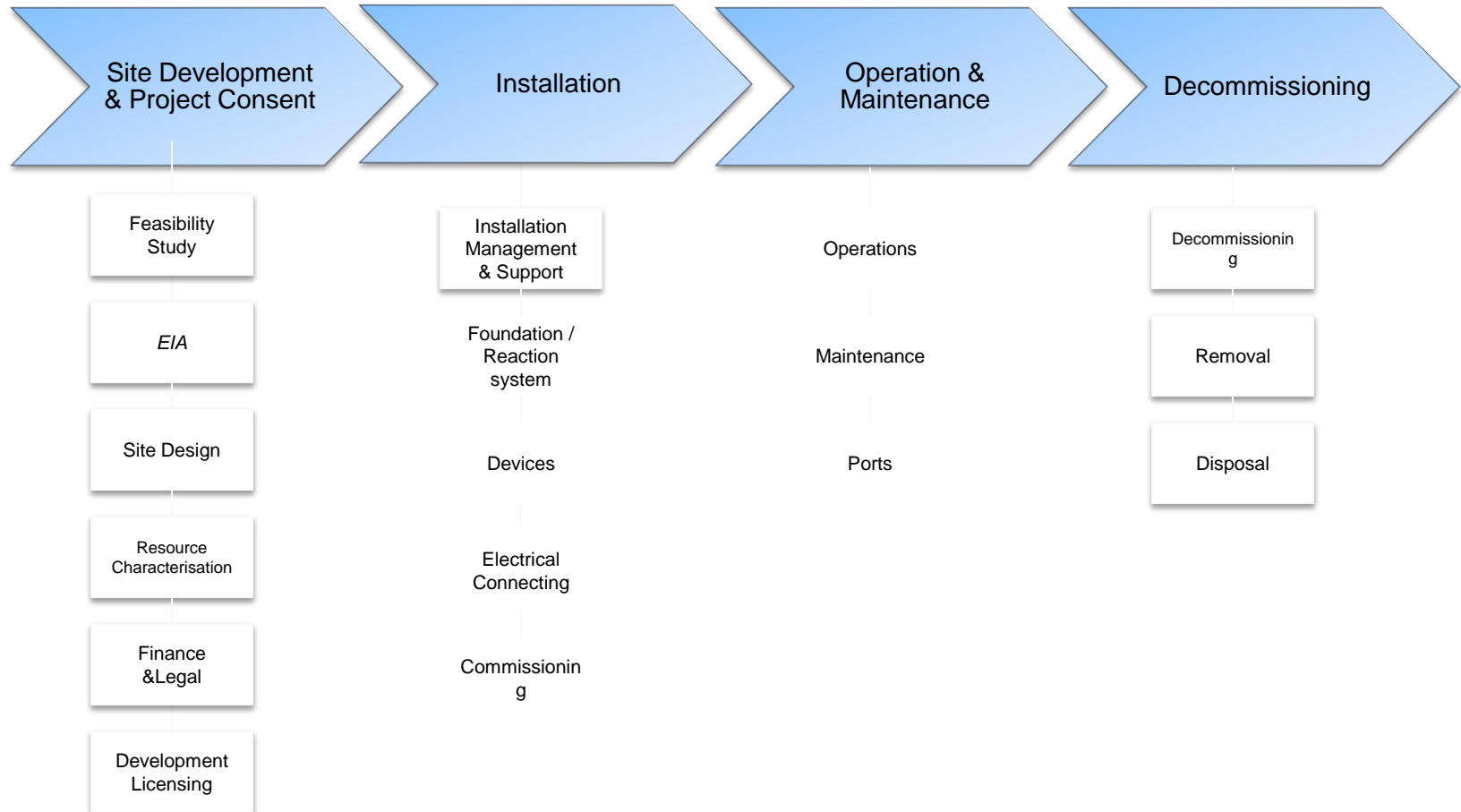
Source: Atlas of UK Marine Renewable Energy Resources (March 2008)



# Marine Energy Model

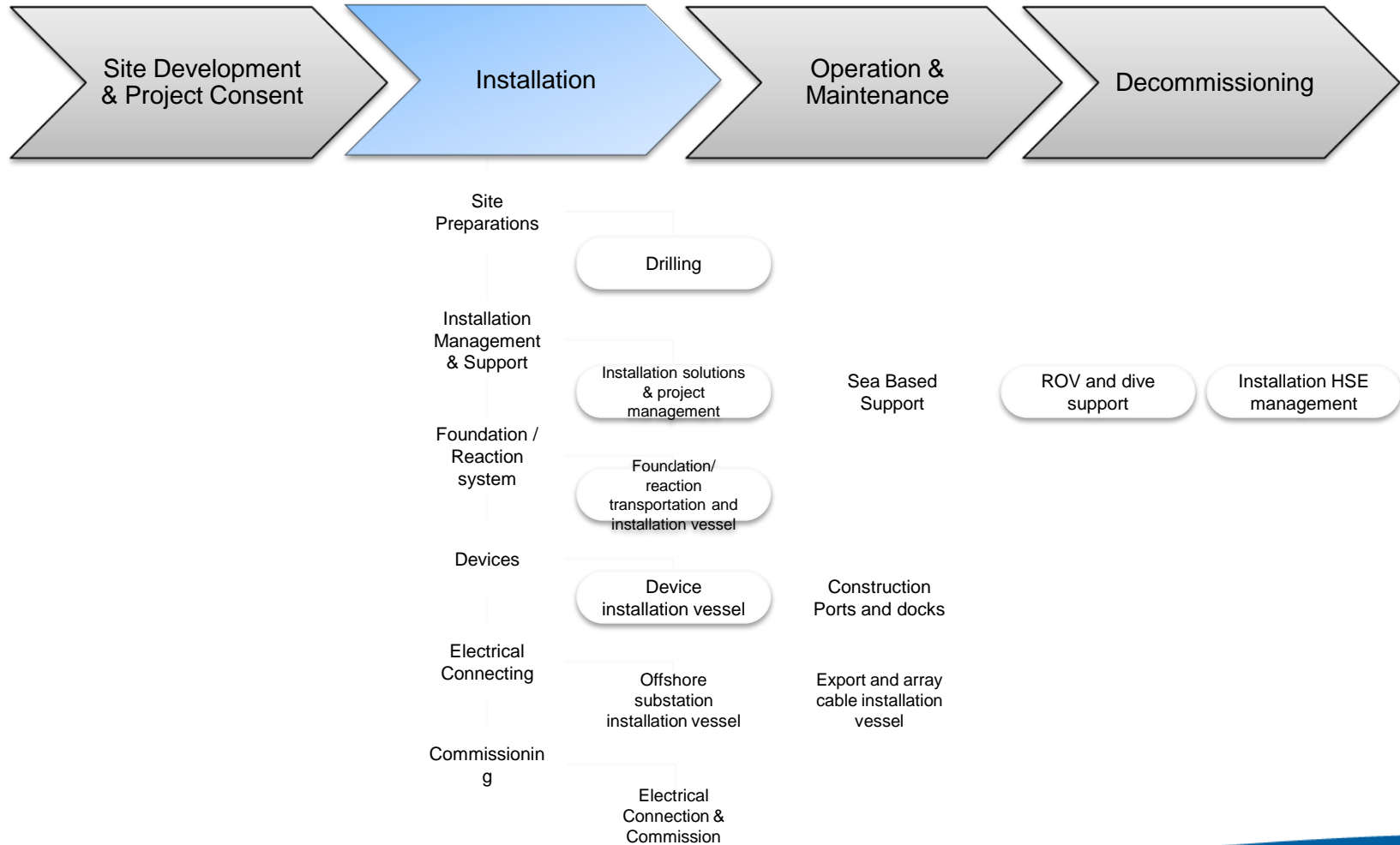


# Deployment

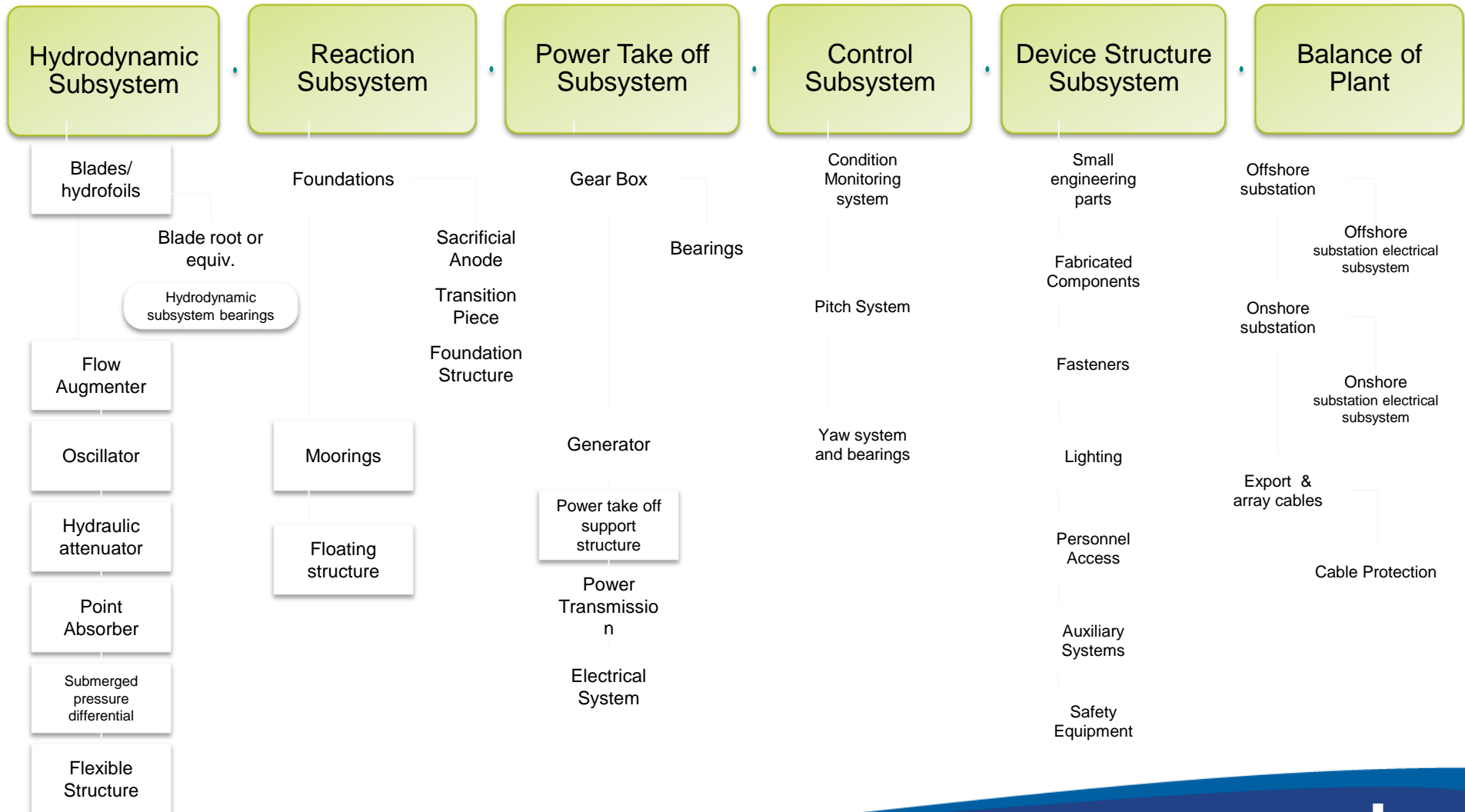




# Deployment



# Manufacture



## Marine Energy Supply Chain Model

3 main threads:

- Technology Development
- Commercial Deployment
- Manufacturing

Main Activities

Core Activities

Sub Activities

## Information

- Value
- Skills
- Assets
- Capabilities
- Type of Company

## Potential Uses of Supply Chain Model

Economic / Value Analysis

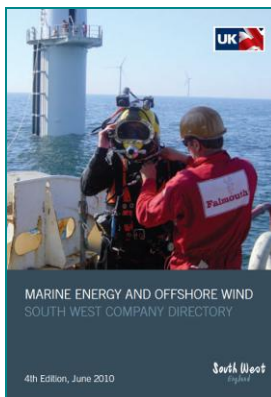
Skills Requirement Analysis

Asset Register / Requirements

Capability/ Gap Analysis

## Company Database

- Company name
- Address
- Contact Details
- Website
- Type of company



# Further Information

[nick.harrington@southwestrda.org.uk](mailto:nick.harrington@southwestrda.org.uk)

Weblink to Supply Chain Directory:

<http://www.regensw.co.uk/directory>





S  
u

# Supply Chain issues for the Marine Energy Sector

## New industrial opportunities

**Birger Haraldseid**  
**Manager Opportunity Development**



**GREATER  
STAVANGER**  
ECONOMIC  
DEVELOPMENT

# Each Partner has something different to bring to the table



- Germany
- UK
- Norway
- Holland
- Denmark
- Sweden



IFP Locations



**GREATER  
STAVANGER**  
ECONOMIC  
DEVELOPMENT



# The future market for Marine Energy in Europe

- Wind is predicted to be the dominating source for new renewable energy towards 2030 – 41% of all new capacity. (12-16% OWE)
- EU's vision about a common market for electricity in Europe, wind energy is to be a key factor.
- Offshore Wind is considered as the new source with near unlimited potential.
- We can see that pressure for onshore wind can and will be met by the NIMBY



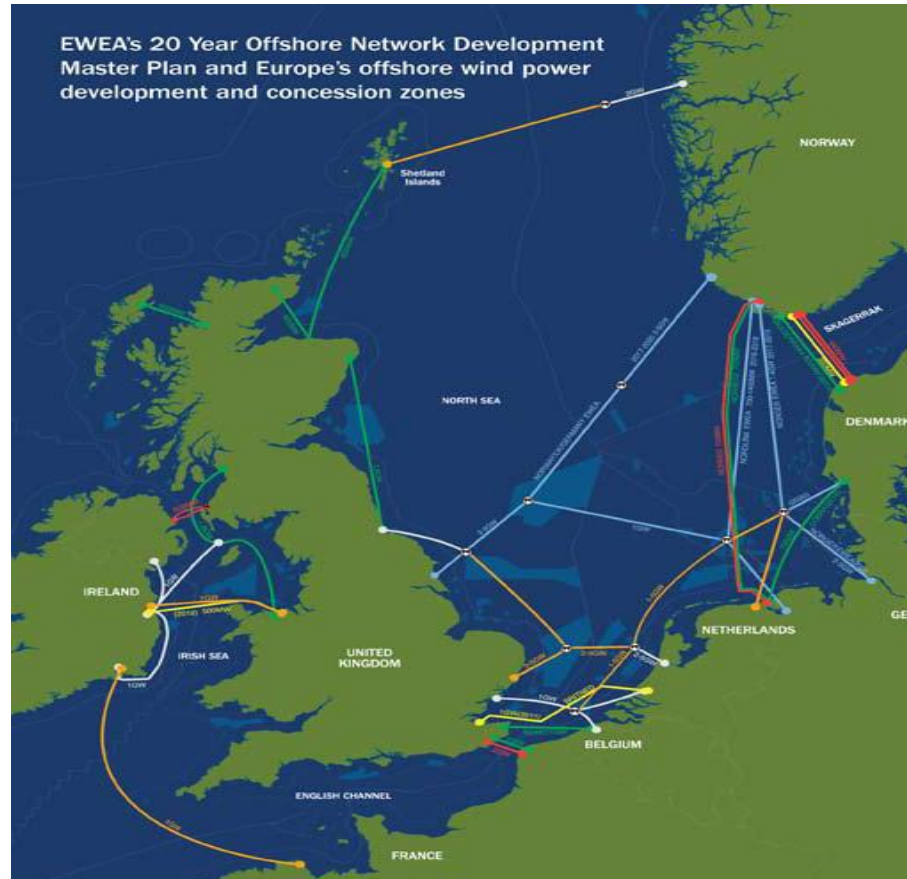
**GREATER  
STAVANGER**  
ECONOMIC  
DEVELOPMENT

# What will it take if Norway are going to supply Europe with more renewable energy?

Grid connections

Technology development

Harmonization of taxes, support regimes etc, and predictability



**GREATER  
STAVANGER**  
ECONOMIC  
DEVELOPMENT

# Some of the key challenges for Offshore Wind



Ports  
Installation vessels  
Weather/Waves  
Logistics  
Skills / Education

# Every country needs to find its own way forward

Norway has an unique opportunity to become an important part of Europe's new green battery



Lyse Energi, Stavanger



Statoil

Offshore Renewables Event – 4th October 2010

List of participants: Roundtable 3 – Supply chain for the offshore RES sector

Bode	Bart	Director	ODE Vlaanderen (Organisation Sustainable Energy Flanders)
Botting	Duncan	Executive Chairman & Interim CEO	Scottish European Green Energy Center Aberdeen
Braestrup	Anders	Business Consultant	Region of Southern Denmark
Burt	Karen	Senior EU Policy Executive	Scotland Europa
Christensen	Allan	Funding Coordinator	Offshore Center Denmark
Clubb	Jon	Regional Climate Change Coordinator	Local Government Yorkshire & Humber
De Freitas	Andrew	Leader	North East Lincolnshire Council
Dobson	Ingrid	Policy Officer	East of Scotland European Consortium
Edwards	Gwen	Stagiaire	South West UK Brussels Office
Fichaux	Nicolas	Consultant wind energy	
Genachte	Anne-Bénédicte	EU Energy and Transport Policy Specialist Advisor	NEEO
Grabs	Mathias	Programme and Project Manager	Bremerhaven Economic Development Company Ltd. (POWER cluster lead partner)
Grinde	Alf Olav		Nordvegen Utvikling
Haraldseid	Birger	Manager Opportunity Development	Greater Stavanger Economic Development
Harrington	Nick	Head of Marine	South West England RDA
Jacobsen	Pal Jacob	Director	Stavanger Region European Office
Jensen	Thomas	EU Advisor	South Denmark European Office
Karigl	Melchior	Project Finance Specialist	European Investment Bank
Løvaas Stavnes	Camilla	Senior adviser - energy	Rogaland County Council
Luken	Rainhard	Secreteray General	CESA
Nesse	Arvid	Managing Director	MET Centre
Pascoe	Simon	EU Policy and Business Development Manager	UDITE - European Federation of Local Authority Chief Executives
Pywell	Chris	Head of Strategic Economic Change	One North East
Luken	Rainhard	Secreteray General	CESA
Rodrigues	Gloria	Head of Policy Analysis	EWEA

Offshore Renewables Event – 4th October 2010

List of participants: Roundtable 3 – Supply chain for the offshore RES sector

Royano	Francisco	Director General of Innovation and Corporate Strategy from SODERCAN Group	Regional Development Agency of Cantabria (Sodercan)
Wood	David	Project Manager	Suffolk County Council (POWER cluster)





## Report

### Roundtable 1: RESEARCH AND TESTING INFRASTRUCTURES



First of all, the workshop described the framework conditions as regards definition, key projects in the field, and EU research and testing infrastructures map.

#### **1.- Clarification of marine (off-shore) renewable energies (compliant with IEA definitions)**

##### ***Marine renewables:***

- Off-shore wind
- Ocean energy (Waves, Tides, Ocean currents, Salinity gradients, Thermal gradients)
- Marine biomasses (algae bio-fuels)

#### **2.- Large EU funded projects (Combined challenges to off-shore renewables)**

##### **1 Coordination Action**

- ORECCA. Led by Fraunhofer IWES. First Workshop 4 – 5 Nov. 2010

##### **2 Large R&D projects**

- MARINA Platform. Led by Acciona Energia. Methodology for assessment of combined wind & ocean energy. 13 M€ for 2010 through 2014.
- HiPRwind. Led by Fraunhofer IWES. Open access research facility for floating wind. 20 M€ for 2010 – 15.

##### **1 Shared Lab Infrastructure**

- MaRINET. Led by HMRC Cork. 2010 through 2014.

The total project volume is 45 M€ for 2010-2015. What is important about these projects is the fact that for the first time EU takes the technological initiative and, on the other hand, these projects will welcome the participation from other partners.

European Union  The European Regional Development Fund



### **3.- EU research and testing infrastructures map.**

From the 17 test sites in EU (which are either operational or under construction and / announced) which appeared in the map, assistant helped to update the EU research and testing infrastructures map presented. At end, there were counted 22 test sites in total where the mobilization of the regional actors is a key factor.

**The second part of the session was devoted to highlight different EU Financial Schemes as regards marine (off-shore) renewable energies:**

**SET PLAN:** Blueprint to the development of low carbon technologies with 7 Industrial Technologies (Wind was launched last June 2010). EITs concern the 2010 -2020 period and their budgets will be covered by both the private sector (relevant industries) and public authorities (at the EU and national level). Specifically, Wind Industrial Initiative scheme is divided as follows: 50% private -50% public which accounts for 6 billions (3 billions from the industry and 3 billions from the public institutions). The impact of Industrial Initiatives is the following: More effective use of public money; Alignment of public funds with the real needs of relevant low carbon industries and R&D communities; Better coordination of EU and national funding schemes and policies; Clarification for development trajectory of low carbon technologies over 2010 period; Acceleration and deployment of infrastructures.

Moreover, SET – Plan roadmap – potential of technologies was presented where it can be seen that, in the first way, the development of wind energy is confirmed. However, wave energy is place in the third wave of development. The conclusion is that wind energy can be developed in short time period with high level of implementation, whereas wave and tidal are not mature enough for 2020.

**7° FRAMEWORK PROGRAMME:** The EC is disappointed about marine projects results and this is the reason why this specific area does not appear in the 2011 workprogramme. However, it can be found an ERANET in this field as well as other initiatives where project enhancing synergies between the two technologies are encouraged. On the other

OPEN DAYS 2010, October 4, Round Table Event on Offshore Renewables – sponsored by POWER cluster.

hand, EC is eager to development more wind projects as it has been stated in the 7<sup>th</sup> FP Energy call: Multiuse offshore platforms and further development in the Black and Mediterranean seas.

**NER 300:** The European Commission, Directorate-General for Climate Action, announces the first Call for Proposals for innovative renewable energy and carbon capture and storage projects under the NER300 competition (formally launched the 09/11/2011 in the Official Journal). The NER300 competition is established under Article 10a(8) of the EU ETS Directive 2003/87/EC, and is detailed in the Decision C(2010) 7499. More information: [http://ec.europa.eu/clima/funding/ner300/index\\_en.htm](http://ec.europa.eu/clima/funding/ner300/index_en.htm)

#### **CONCLUSION:**

One main conclusion which is that there is no one single financial mechanism which stands for test and sharing infrastructures apart from MARINET which can be extended to large scale infrastructures in the future. In order to tackle and solve this problem the group has came up with an possible project idea or collaboration within regions using structural funds to work together in this field while incorporating SME and University to play a key role in this area.



## Report

### Roundtable 2: Skills Gap in the Offshore Renewable Energy Sector



- **NEED OF HARMONISATION / STANDARDISATION:** For offshore RES to develop into a safe, dynamic industry there is a need of better knowledge of each other's educational systems, standardization and closer collaboration between partnerships (Northumberland College). Today, duplication of programmes is a problem, caused by secrecy in the industry and regional ambitions. Similar models with different standards are thus developed. Ian Fisher of the Power Cluster confirmed this and named the Windskill project as a best practice and example for this. But even though the requested skills and training methods are standard, the problem of job placement and career opportunities should not be underestimated.

- **COSTS OF / INFRASTRUCTURE FOR TRAINING:** it is a problem that the cost to train staff is very high, and that infrastructure for training is lacking.

- **SYNERGIES WITH SKILLS IN OIL & GAS:** to get the PRACTICAL training for those going into the sea, it was seen to be a huge synergy potential in transferring knowledge from oil and gas operations to the needs of the offshore RES sectors. Some places, there are however worries that offshore RES will take away skilled people from the oil and gas sectors (Humber).

- **SKILLS AND LOCATION:** There is a need to transfers skilled people to where the hot spots for the industry will be. At the same time, skills need to be trained locally, to be adapted to the local needs (Northumberland College). Moreover skills must be adapted to existing problems linked to the financial crisis. The PATCH project is a good example.

- **NUMBER OF TRAINED PEOPLE AND TIMING:** it is important to train the right amount of people so that the market isn't flooded with people. The industry needs to be brought aboard also to ensure that the appropriate number of people is trained. It is necessary to also map industry skills programmes.

- **NEED OF LEADERSHIP:** In the skills field, there is a need of leadership from industrial bodies like the EWEA, as well as from the national and European levels, to enable regions to benefit from opportunities, and to contribute to the European /national and regional aims in climate & energy.

- **TRIPLE HELIX:** The cooperation between companies, universities and authorities is very important.

- **EUROPEAN FUNDING POSSIBILITIES:** It is hard to access European funding in the field (Port of Oostende). The relevant possibilities of European funding, with examples that were presented, were identified as:

**1) Marie Curie: For young, skilled researchers**

High competition: only 10% get support. Example: a **proposal** for a Marie Curie Initial training network, by Marcin Luczac, the Fluid Flow Machinery Polish Academy of Science. Scope: wind turbine technicians for offshore deep water & floating installations. There is a need for involvement of the private sector. This proposal is still open for players who would like to join the partnership.

**2) LLP/the Leonardo da Vinci programme: For the vocational training sector.**

Example: a **proposal** for a transfer of innovation project for education for wind technicians, with aims to pick up existing experience and implement this in countries where such education is needed, by Frank Emil Moen, Dalane College (NO). Transfer of knowledge of curricula via e-learning. A need industry partners for financing and development of the project. This proposal is still open for players who would like to join the partnership.

**3) CIP/IEE, presented by Dana Dutianu, EC.** Non-technical barriers and issues. Training, networking strategic issues. Turning policy into action and transforming the markets. The skills gap can be bridged by focusing on the market side and by training of policy makers.

a) **The WINDSKILL** project (2006-09): An industry-led project (the German Wind Energy Association) trying to remedy lack of awareness of other educational systems by harmonization of European qualification standards in the wind energy sector. Development and testing of a European Qualification Profile. A good but not highly visible project.

b) **GPWIND** project (ongoing 2010-12). The project addresses barriers to the development of on/offshore wind generation by developing good practice in reconciling onshore and offshore wind with environmental objectives. There is a need for dialogue with the public over the benefits of offshore wind, and the project seeks to increase social acceptance and commitment to wind energy.

A toolkit of good practice from regional and national level will be produced.  
Lead partner: The Scottish Government.

#### **4) Regional funds: Mainly directed to local authorities with a view of regional development**

a) The Power Cluster project (INTERREG IVB North Sea, 2008-11, led by Bremerhaven Economic Development, DE) aims to identify similar educational models with different standards for programmes and initiatives in offshore wind. It seeks to remedy the lack of skilled personnel at all levels in the wind sector. An offshore wind training programme is being developed, where the best regional deliverer for each module has been picked, e.g. for:

- Health/safety/survival
- Supply Chain management
- Mechanical / technology aspects

b) PATCH (Ports adapting to change) project (INTERREG IVA, led by the Port of Oostende, BE, 2008-12). An English Channel and North Sea perspective on skills for offshore RES. There is a lack of financial and human resources to implement the wind farms. The ambitions have enormous scale, leading to challenges in supply chain, operations in deeper water (need to optimize on-shore fabrication and assembly). Turbine technicians will be a bottle neck. So will financial planning and availability of skilled people. Niche ports with focus on among other aspects:

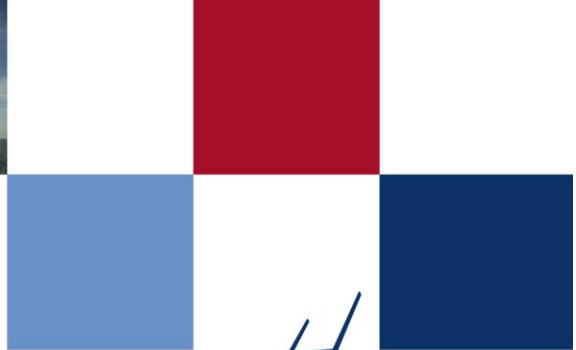
- Health & safety
- Construction & industry
- Operations and maintenance
- Logistics.

#### **5) Public Private Partnerships**

Example: the Port of Oostende. How to make space in harbors for the logistics for wind farms. Clustering and networking with industry to identify needs. Mostly funded by private funds.

- GENERAL CONCLUSION: on top of the challenges in finance and supply chain in the offshore renewables sector, the real bottleneck for the development was found to be in the **skills field** (rather than in technology).





## Report

### Roundtable 3 – Supply chain for the offshore RES sector

The key message which emerged from the roundtable discussion was the need for clear leadership in Europe on development of the renewable energy sector and its supply chain. Without clear leadership, there is the danger that European countries and regions will duplicate efforts or end up competing against one another, rather than collaborating to be better able to compete in the international sphere.

We need to concentrate investments to achieve critical mass in Europe, and to ensure investments are worthwhile, rather than losing the funds that might otherwise go into projects which fail. In the current economic crisis, there has been the appearance of nationalism in Europe in the battle to create jobs. This shouldn't be allowed to hamper collaboration and learning from one another where we can.

However, it was also noted that competition, rather than too much collaboration, can play its role in bringing the costs of renewables down. While this could be true for the offshore wind sector, it is felt that wave and tidal energies are not yet at a sufficiently advanced stage for competition to be beneficial to their development. It was noted that several companies – including defence companies - are currently looking at the sector as a future business opportunity but are as yet not convinced of its longevity.

The greatest danger for the sector is the lack of a market, with a peak in energy demand imminent and profit margins continuing to reach 40-50% higher for oil and gas than for renewables.

On supply chain needs, it is not clear that these are the same for the number of different energy systems which exist, particularly in the case of marine renewables. One prominent need for all offshore systems is adequate port infrastructure. Bremerhaven was held up as a best practice example of successful upgrading of a key port, but it was noted that there are some clear limits to the scope for cooperation on such infrastructure projects; there is of course competition between different port locations, and the sheer scale of the Bremerhaven port makes it difficult to replicate in other areas.

The project's success does, however, depend on strong, collaborative networks at the local level with, for example, the research and development community.

Further key concerns for EU regions include:

- Bringing down costs in all elements of the supply chain
- An emerging skills gap
- A lack of manufacturing capacity for offshore wind
- The longer term predictability and sustainability of public subsidies
- The need for knowledge sharing between the offshore renewables and oil and gas sectors
- Adapting infrastructure, particularly ports
- Issue of certification of devices