

TPWind activities

Nicolas Fichaux, Secretariat

Mirror Group meeting

- ❑ 16 countries were represented
- ❑ Elections:
 - Chairperson: Susanna Widstrand, Sweden
 - Vice-chairpersons: Mrs M. Ferre (Ministerio de Education y Ciencia, Spain), Mr I.O. Doornbos (Ministry of Economic Affairs, The Netherlands), Mr J. Nick Leptin (BMU, Germany)
- ❑ Each country presented its national R&D programme and budget
- ❑ The option of creating an ERA-Net for enhancing coordination was discussed

Mirror Group meeting – follow-up

□ Second meeting during 3rd General Assembly

□ Agenda:

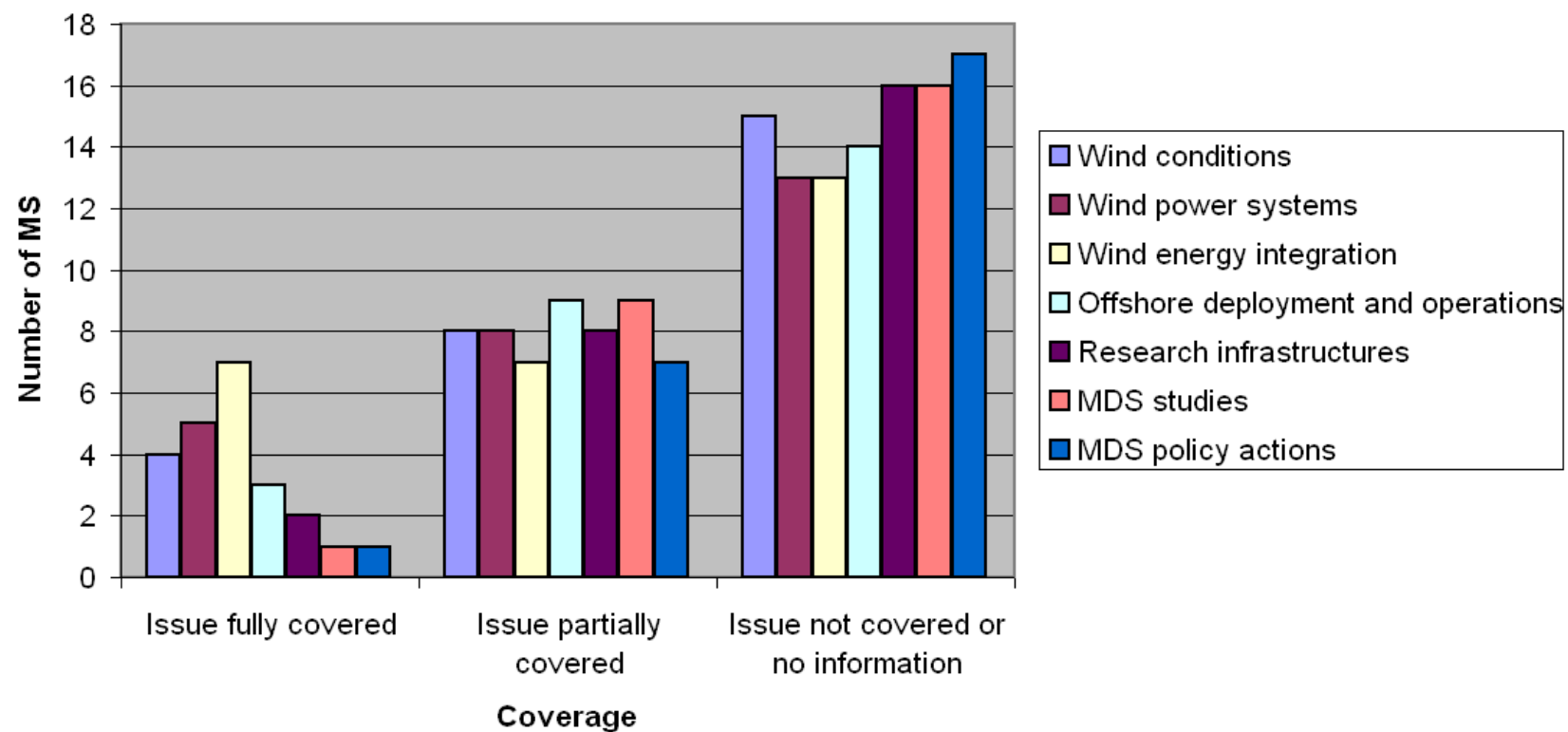
- Terms of reference of the Mirror Group
- Feedback on SRA/MDS
- R&D monitoring tool
- Brainstorming:
 - Coordination of R&D programmes
 - MDS recommendations on grid integration
 - MDS recommendations on environmental issues

Mirror Group – R&D monitoring tool

Section		Austria	Belgium	Bulgaria	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany
1											
2	Wind conditions	2	2	0	0	0	1	2	0	2	1
3	Wind conditions Sitting in complex terrains	X					X	X		X	X
4	Wind conditions Offshore meteorology						X	X		X	X
5	Wind conditions Wakes						X				X
6	Wind conditions Extreme wind speeds						X				X
7	Wind conditions Wind profiles at great heights						X			X	X
8	Wind conditions Short-term prediction						X	X		X	X
9	Wind power systems	0	2	0	0	0	1	2	2	2	1
10	Wind power systems Wind turbine as a flow device		X				X			X	X
11	Wind power systems Wind turbine as a mechanical structure/materials		X				X		X	X	X
12	Wind power systems Wind turbine as an electricity plant						X	X		X	X
13	Wind power systems Wind turbine as a control system						X	X	X		X
14	Wind power systems Innovative concepts and integrated designs		X				X				X
15	Wind power systems Operation and maintenance						X	X		X	X
16	Wind power systems Standards						X	X		X	X
17	Wind energy integration	2	2	0	0	0	1	2	0	2	1
18	Wind energy integration Wind power plant capabilities						X				X
19	Wind energy integration Grid planning and operation	X					X	X		X	X
20	Wind energy integration Energy and power management						X			X	X
21	Offshore deployment and operations	0	2	0	0	0	1	2	0	2	2
22	Offshore deployment and operations Education						X				
23	Offshore deployment and operations Safety						X				X
24	Offshore deployment and operations Environment						X	X		X	X
25	Offshore deployment and operations Assembly, installation, decommissioning						X			X	X
26	Offshore deployment and operations Electrical infrastructure						X				X
27	Offshore deployment and operations Turbines						X			X	X
28	Offshore deployment and operations Operation and maintenance						X				X
29	Research infrastructures	0	2	0	0	0	2	2	0	2	1
30	Research infrastructures Wind conditions						X			X	X
31	Research infrastructures Wind power systems		X				X				X
32	Research infrastructures Wind energy integration							X		X	X
33	Research infrastructures Offshore						X			X	X
34	MDS studies	0	2	0	0	0	2	0	0	2	2
35	Enabling market deployment Removing electricity market barriers									X	X
36	Enabling market deployment Securing revenues										X

Result

SRA/MDS coverage by Member States (MS)



SRA publication

- ❑ Publication in July 2008
- ❑ **International coverage:**
 - New energy News: EUROPE WIND: 25% BY 2030
 - Environmental expert: How wind energy could provide up to 28% of EU electricity consumption by 2030
 - Ends: Wind "can provide quarter of EU power by 2020"
 - Euractiv: Wind 'can produce over 25% of EU electricity by 2030'
- ❑ 1000 copies sent all around EU
- ❑ Downloaded 200 times

3rd General Assembly

□ Future of TPWind

- **Strategic Research Agenda & Market Deployment Strategy** documents - satisfaction level, specific improvements
- **TPWind** - satisfaction level, improvements, additional activities
- **Communication** - level of information, actions, website, newsletter, improvements
- **Impact** - on daily activity, dissemination by members

□ SRA implementation

- Concrete projects, type of consortium, academic/public-private partnership/private, cost, duration, EU/MS/private sector budgets

EWI

- ☐ Proposal sent in June 20th
- ☐ Meeting with EC on Sept. 8th
 - EC requests a focus on offshore
 - EC request including long-term research aspects
 - Proposal: set a working group to find agreement (not done)
 - new version requested for Oct. 3rd
- ☐ Secretariat updated proposal and sent it to EWI working group on Oct. 2nd
 - Proposal includes 1 additional EWI component on specific offshore actions

EWI proposal – 2nd version

□ SET-Plan: 2 time objectives

- For 2020: **accelerate the development and deployment of cost-effective low carbon technologies** and implement the *20/20/20 targets for 2020*
- For 2050: **limit climate change by 2°C**, by matching the vision to reduce EU greenhouse gas emissions by 60-80%, by:
 - further lowering the cost of clean energy
 - putting EU industry at the forefront of the rapidly growing low carbon technology sector
 - longer term: new generations of technologies are foreseen, through breakthroughs in research.

EWI – based on TPWind's vision

- ❑ Phase 1: Short term (2020) – **Objective of 180 GW, including 40 GW offshore.** Main contribution is onshore for SET-Plan 20/20/20 2020 targets.
- ❑ Phase 2: Medium term (2020-2030) - The **capacity reaches 300 GW in 2030.** In 2030, offshore represents 10% of the EU electricity consumption. Offshore takes off.
- ❑ Phase 3: Long term (2030-2050) - **The main European markets are in offshore and re-powering** and exports outside Europe are strong. Offshore leads the market.

EWI structure & objectives

- ❑ Two major components fulfilling the SET-Plan objectives:
 - **Specific, large-scale, industry-led, demonstration actions** having a clear added-value at European level, designed to rapidly tackle main challenges for a fast, cost-efficient and sustainable implementation of the **short-term 2020 targets**.
 - **Long-term research actions** designed to further decrease the costs of energy, and ensuring a European leadership based on technology and knowledge.

6 EWI activities

- ❑ Objectives:
 - To **reduce the cost of wind energy**, making wind energy the **most competitive energy source on the market in the long-term**
 - To **enable the large-scale deployment and grid integration** of wind energy offshore and onshore
 - To ensure **stable** support mechanisms and policies
 - To address the issue of **human resources and education**
 - To support the **take off of the offshore markets**, and prepare the leading role of offshore beyond 2020

EWI1: Exploring wind conditions for better wind turbine design, micro-siting and wind resource assessment

❑ Improving reliability and cost efficiency

- knowledge of the effect of the wind on complex structures to determine external design parameters onshore and offshore

❑ Harnessing complex sites, including offshore

- in-depth knowledge of wind characteristics, through advanced measurement techniques and systems

❑ **Action:** Several large-scale measurement campaigns will be launched in complex terrains, forested and nearshore / offshore sites across Europe

EWI2: Reducing the cost of wind energy by optimizing reliability, operations and maintenance (O&M), efficiency, manufacturing processes and the implementation of breakthrough technologies

❑ Improving reliability and cost efficiency

- Developing and demonstrating the next generation of onshore and offshore turbines, components and technologies

❑ Maximising manufacturing capacity

- Developing and testing advanced lean manufacturing processes for turbines, components and offshore structures in current European plants

❑ Actions:

- Developing the onshore and offshore wind turbines of the decade to come, and performing demonstrations in severe conditions, and for extreme loads
- Improving and automating manufacturing processes, standardisation of components and methods, development of common platforms and/or means

EWI 3: Enabling fast, large-scale grid integration of wind energy offshore and onshore

- ❑ **Grid management** - Capacity of the **existing electricity systems** to integrate higher wind power penetration levels
- ❑ **Grid reinforcement and extension** - Enabling timely implementation of the **grid reinforcements** and extensions onshore and offshore
- ❑ **Networks of the future** - Developing and demonstrating **innovative large-scale grid concepts**
- ❑ Actions:
 - Simulating, developing, and demonstrating **advanced grid management functions, market regulations and technical solutions.**
 - **Strategic grid planning** of future wind power locations in the short, medium and long term, and the required electrical infrastructure developments.
 - **Demonstrate advanced grid concepts and technologies.** Defining and testing **pan-European grids both onshore and offshore.**

EWI4: Facilitating Europe-wide wind energy deployment

- ❑ Creating the **necessary economic incentives** for large scale deployment of wind power. **Developing long-term planning and streamlining permitting procedures.**

- ❑ Actions:
 - **Stable and appropriate support schemes** for wind power at MS level, **national action plans** under the EU renewable energy directive must be developed and monitored continuously, with industry involvement.

 - Promoting integrated **long-term planning and best practices** for wind energy onshore and offshore. In designated wind power areas, permitting procedures must be streamlined and grid infrastructure quickly implemented.

EWI5: Addressing the issue of human resources

- ❑ **Training people:** Create training schemes to fill the needs of the future wind power sector

- ❑ Action:
 - In partnership with the European Academy of Wind Energy, creating a **European Wind Energy Training Centre**, with correspondents in various Member States and local partnerships with universities

EWI6: Specific medium/long term offshore actions

- ❑ EWI1 to EWI5 are relevant for both onshore and offshore on transition period up to 2020
- ❑ EWI6 prepares TPWind's vision phase 2&3:
 - Offshore take-off in medium term
 - Offshore leadership in long term
- ❑ From TPWind's SRA – actions with EU added value:
 - **Substructures** - Developing novel sub-structure designs and improved manufacturing processes that reduce costs.
 - **Assembly, installation and decommissioning** - Developing safe, efficient, reliable processes that are easy to replicate.
 - **Environment** - Improving knowledge of the physical environment, and improving datasets, to significantly reduce development risks and financial uncertainty.

EWI6: Supporting offshore take-off in the short to medium term and ensuring long-term offshore leadership

□ Actions:

- **Mass production and mass installation**
 - Prepare for mass production of standardized sub-structures
 - Develop safe, efficient, reliable and repeatable installation processes
 - Investigate and develop the substructure concepts for the future deep water developments.
- Improve market transparency, and reduce risks for the maritime sector to **construct and deploy sufficient vessels and equipment** to meet the demands of the installation programmes. Test specific access systems and boats.
- Acquisition and sharing of environmental data: **ten different offshore monitoring programmes** will be supported across Europe. These monitoring programmes take place alongside commercial offshore developments, and oil platforms in deep offshore areas.

EWI implementation

- ❑ Budget range: €1.3 – 2.3 bn on period 2010 – 2020

- ❑ To be defined:
 - Implementation structure
 - Key performance indicators
 - Practical industry involvement
 - IPR...