



Concerted Action on Offshore Wind Energy in Europe RTD Strategy



***Ewen Morrison
Project Engineer***

***Garrad Hassan & Partners Ltd
Glasgow, Scotland
www.garradhassan.com***





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Work Package 2.5

RTD Strategy

Contract No. NEE5/1999/562

Funded by the European Commission





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Research & Technological Development

State-of-the-art



Key problem areas



Future directives



Courtesy Blyth Offshore Wind Limited



Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Objective:

“To define current state-of-the-art in offshore wind energy and identify RTD priorities to 2006”

**Gathering
Evaluating
Dissemination**



**Manufacturers
Developers
Financiers
Governments
Politicians**

**Presentations & website:
www.offshorewindenergy.org**





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Thematic Format

- 1. Offshore technology***
- 2. Grid integration and electrical transmission***
- 3. Resources and economics***
- 4. Recent and current activities***
- 5. Social, political and environmental issues***



Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Consultation & Evaluation

CA-OWEE RTD Strategy Framework				
Consensus from responses				
Consensus				
		Timescale (2/5/10 yrs)	Importance (Low/Med/High)	
	Better definition of design criteria and extreme wind/wave recurrence periods for inshore waters	2	High	Offshore Technology
	Development and validation of models for reliable prediction of fatigue and extreme loads	2	High	Offshore Technology
	Assess reliability of existing spectral wave models	2	High	Offshore Technology
	Measurement campaigns on early projects	2	High	Offshore Technology
	Review of safety factors	2	High	Offshore Technology
	Investigation of breaking waves, shallow water effects and resulting loads.	2	High	Offshore Technology

Consensus to follow /...

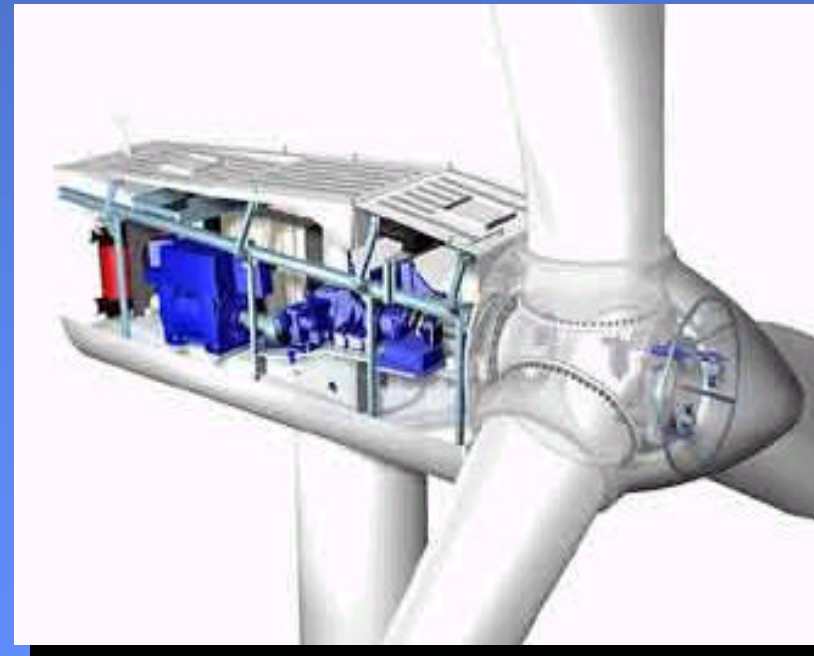




Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Offshore Technology Priorities

- 1. Optimal structural design**
- 2. Support structure/tower**
- 3. Design for reliability**
- 4. Design for maintainability**
- 5. Design for installation**
- 6. Size and configuration**
- 7. Design criteria & standards**





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Grid Integration & Electrical Transmission Priorities

- 1. High voltage generation*
- 2. Geographical grid limitations and strengthening*
- 3. Grid/turbine simulation models*
- 4. Dissemination of experience from projects*
- 5. Equipment development*



Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Resource & Economic Priorities

- 1. Offshore wind potential*
- 2. Capital investment*
- 3. Economics*
- 4. Uncertainty in energy yield*
- 5. Forecasting*





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Recent & Current Activities Priorities

- 1. Demonstration projects*
- 2. National plans & activities*
- 3. Market development*
- 4. Benefits to the environment*
- 5. Employment & industrial prospects*
- 6. Database of information on projects & research*





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Social, Political & Environmental Priorities

- 1. Conflicts of interest*
- 2. Environmental impacts*
- 3. Social acceptance*
- 4. National policies*





Concerted Action on Offshore Wind Energy in Europe RTD Strategy

Follow-on project to address:

- ***Faster dissemination of information to industry***
- ***Re-issue of CA reports to include current developments***
- ***Update & maintenance of CA website***



Concerted Action on Offshore Wind Energy in Europe RTD Strategy

***“RTD remains crucial for the future success of offshore
wind energy in Europe”***





Concerted Action on Offshore Wind Energy in Europe RTD Strategy



www.offshorewindenergy.org

Acknowledgement: EC funding & 17 partners

