

Tentative Programme for

**A one week training activity at RISØ 2003 in
Specific Offshore Wind Farm Planning, Development and
Implementation Aspects**

Designed for ITRI staff

Tentative programme

Day	Time	Subjects	Conducted by	
8 Mon	9:00	Welcome + introduction to RISØ	<i>Lars Landberg</i>	RISØ
	9:30	Introduction to RISØ WindConsult	<i>Niels-Erik Clausen</i>	RISØ
	10:00	Introduction of participants	<i>The participants</i>	ITRI
	11:00	Discussion of the programme	<i>Per Nørgaard</i>	RISØ
	12:00	Lunch		
	13:00	Wind power short term prediction	<i>Gregor Giebel</i>	RISØ
	14:00	Grid connection and wind power plant operation	<i>Poul Sørensen</i>	RISØ
9 Tue	9:00	Offshore wind resources	<i>Rebecca Barthelmie</i>	RISØ
	10:00	Offshore measurements technical aspects	<i>Ole Frost Hansen</i>	RISØ
	11:00	Advances in satellite techniques	<i>Charlotte Hasager</i>	RISØ
	11:30	Building a wind atlas	<i>Niels Mortensen</i>	RISØ
	12:00	Lunch		
	13:00	Basis on wind energy extraction and offshore technology	<i>Sten Frandsen</i>	RISØ
	14:30	Offshore wind energy status and economics	<i>Rebecca Barthelmie</i>	RISØ
	15:00	Design and standards	<i>Sten Frandsen</i>	RISØ
10 Wed	7:00	Technical tour to Nysted Offshore Wind Farm		Energi E2
11 Thu	9:00	Environmental loads in large offshore wind farms	<i>Niels Jacob Tarp-Johansen</i>	RISØ
	10:00	Offshore wind turbine foundation design and project implementation	<i>Kim Ahle</i>	Tech-wise
	12:00	Lunch		
	13:00	Operation and maintenance of offshore wind farms	<i>Kim Ahle</i>	Tech-wise
	14:00	Quality assurance, offshore project certification	<i>Peter Petersen</i>	DNV
12 Fri		Taiwan case study workshop		RISØ experts
All	12-13	Lunch break		

The programme will be flexible and adjusted based on a presentation of the participant's background and experiences, in order best to meet the participant's needs and requests.

<i>Subject</i>	<i>Contents</i>	<i>Experts</i>
Offshore project certification	Investors may require project certification of offshore wind farms, by insurance or as part of the national approval scheme for offshore wind farms. The project certification is proposed to cover site-specific design verification of the integrated foundation and wind turbine structural system as well as manufacturing survey and marine verification. In order to benefit from our experience certification is recommended to start up already at design basis level.	<i>Peter Petersen (DNV)</i>
Case study workshop	Taiwan case study workshop: Discussion and formulation of a proposal for a road map for establishing a qualified decision basis and support facilities for offshore wind power in Taiwan. The case study workshop will be based on actual Taiwan case with data provided by the participants. During the workshop, selected aspects of the case(s) will be discussed. The actions needed to progress, to establish a decision basis and to be able to specify a project will be discussed and formulated as far as possible.	<i>RISØ experts</i>

E2	<p>ENERGI E2 is a leading, Danish production and energy trading company. We own and operate seven large and eleven small power stations and CHP plants in Eastern Denmark and have a share in a number of hydropower plants in Sweden and Norway. In addition to this E2 owns wind turbines in Sweden, Greece and Spain.</p> <p>The company was formed on 27 June 2000 (with retrospective effect from 1 January 2000) as the result of a merger between SK Power Company A/S, Københavns Energi Produktion A/S and EK Energi Power Company A/S.</p>	www.e2.dk
Tech-wise	<p>Tech-wise is an international engineering company specialising in energy and environment. Tech-wise have approx. 220 highly skilled employees with competencies and knowledge extending from the broad overview to the smallest detail within energy and environment. A wide range of companies and organisations benefit from this expertise.</p> <p>Tech-wise is a subsidiary of the power utility Elsam, who owns and operates a number of central and local power plants and wind power facilities.</p>	www.tech-wise.dk
ITRI	<p>The Industrial Technology Research Institute (ITRI) in Taiwan, founded in 1973, is a primary R&D centre for the industry. ITRI derives almost half of its revenue from royalty, contractual research and services, a situation sustainable only by a continuous demonstration of technical excellence and superior business practice. Over the years many companies and institutions, domestic or foreign, have found working with ITRI a truly win-win experience.</p> <p>Energy Technology: Concerted effort in this field has produced key technology for renewable energy, innovative energy utilization and energy conservation. The main points lie in solar energy, geothermal energy utilization, wind power generation, waste-to-energy utilization, fuel cells and hydrogen energy, electrical vehicle power, clean coal and decentralized power generation, cogeneration system efficiency improvement, versatile fuel gasification, high efficiency air conditioning, ventilation and refrigeration technology development, waste heat recovery for power generation, low pollution and energy saving combustion, power supply monitoring, power electronic, high-efficiency lighting and electrothermal energy saving.</p> <p>The Energy & Resources Laboratories (ERL) focuses its research on energy, resources, and environmental technology. ERL's endeavours in these disciplines are transferred to industry to save energy, rationalize resource utilization, and protect the environment while reaching for advanced technologies.</p>	www.itri.org.tw