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Scientific Track

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European Academy of Wind Energy



European Academy of Wind Energy

Programme Content

The results of various EC funded projects will be presented and discussed:

- R&D network
- RE- Xpansion
- Wind Energy - The Facts



European Commission

DG TREN and DG RTD

Delegate Bags

Owens Corning
USA



Badges

GE Energy
USA



Badge Ribbons

Renewable Energy Systems
UK



Conference Reception

Venue & entertainment

A2SEA
UK



Exhibitors Reception

WindEnergy, Hamburg Messe
Germany



Coffee Breaks

LM Glasfiber
Denmark



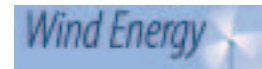
Wireless LAN

Offshore Marine Management
UK



Official Journal

Wind Energy Journal
UK



Renewable Connections Reception

DTI, UK
Ernst & Young, UK



Cyber Cafe

Scottish Power
UK



Business Center

Simmons & Simmons

Simmons & Simmons

Welcome Coffee

npower renewables
UK



Monday 22 November 2004

10:00 - 17:30

Conference Programme

Programme subject to alteration at the discretion of the organiser. The following speakers have been invited.

08:00 - 10:00 Registration, welcome coffee & poster session

Opening Session

10:00 - 12:00



Patricia Hewitt



Antoni Martínez



Margareta Wolf



Jacek Piechota



Mechtild Rothe



Arthouros Zervos

Chair: Antoni Martínez, Managing Director, Ecotècnia, Spain

- **Opening address:** Rt. Hon **Patricia Hewitt** MP, Secretary of State, DTI, UK
Followed by a question & answer session
- **A representative of the European Commission**, Belgium
- **Margareta Wolf**, Parliamentary State Secretary, Federal Ministry of Environment, Nature Protection and Nuclear Safety, Germany
- **Jacek Piechota**, Secretary of State, Ministry for the Economy, Poland
- **Mechtild Rothe**, MEP, European Parliament, Belgium
- **Laurens Brinkhorst**, Ministry of Economic Affairs, The Netherlands (video presentation)
- **Arthouros Zervos**, President, EWEA, Belgium

12:00 - 14:00 Official exhibition opening & lunch (Exhibition halls 1&2)

Achievements & Challenges

14:00 - 15:30

Chairs: Arthouros Zervos, President, EWEA, Belgium

- Technology
Andrew Garrad, Garrad Hassan & Partners, UK
- Costs and prices
Poul Erik Morthorst, Risoe National Laboratory, Denmark
- Environment
David Mora, University of Flensburg, Germany
- Market and challenges
Corin Millais, CEO, EWEA, Belgium

15:30 - 16:00 Coffee break (Exhibition halls 1&2)

Security of Energy Supply

16:00 - 17:30

Chair: Rick Sellers, IEA

Introduction: Shimon Awerbach, SPRU - University of Sussex, UK

- **Karen de Segundo**, Shell Renewables, The Netherlands
- **Klaus Rave**, Investitionsbank SH, Germany/ Vice President, EWEA
- **Walt Patterson**, RIIA, UK
- **Lucia van Geuns**, CIEP, The Netherlands

19:00

Conference reception - Madame Tussauds - For conference delegates only

Tuesday 23 November 2004

9:00 - 10:30



■ Business & Policy (Grand Hall)

■ Scientific (Severn)

■ Technical (Greenwich)

■ Workshops (Avon)

08:00 - 09:00 Registration, welcome coffee & poster session

Integrating Wind Power in Electricity Markets

09:00 - 10:30 Chairs: **Andreas Wagner**, GE Energy, Germany

Karl Kellner, DG TREN, European Commission

- A strategy for locating the least cost wind energy sites within an E.U. electrical load and grid infrastructure perspective.

Paul Dowling, Airtricity, Ireland

- Electricity generation in a liberalised energy market with wind energy

Marcel Krämer, ForWind - Center for Wind Energy Research, Germany

- Impact of hourly wind power variations on the system operation in the Nordic countries

Hannele Holttinen, VTT Technical Research Centre of Finland, Finland

- Value and additional cost of large-scale wind integration into the European grids

Hans Auer, Energy Economics Group, Vienna University of Technology, Austria

- Market integration of wind power

Dr. Peter Meibom, Risoe National Laboratory, Denmark

The Science of Wind Energy I

09:00 - 10:30 Chair: **Erik Lundtang Petersen**, Risoe National Laboratory, Denmark

- Analytical modelling of wind speed deficit in large offshore wind farms

Sten Frandsen, Risoe National Laboratory, Denmark

- Solutions for the grid integration of wind farms - A survey

Pierre Bousseau, EDF, France

- How coherent is inter-annual variability of wind indices across Europe and what are the implications for large scale penetration by wind energy of electricity markets?

Charlotte Hasager, Risoe National Laboratory, Denmark

- Short-term wind forecasting using off-site observations

Kristin Larson, 3 Tier Environmental Forecast Group, Inc., USA

Resource Assessment

09:00 - 10:30 Chairs: **Lars Landberg**, Risoe National Laboratory, Denmark

Bengt Tammelin, Finnish Wind Power Association, Finland

- To reduce power programme imbalance by using wind power forecasts

Arno Brand, ECN Wind Energy, The Netherlands

- Comparison of corrections to site wind speeds in the offshore environment: value for short-term forecasting

Rebecca Barthelmie, Risoe National Laboratory, Denmark

- The effects of global climate change on wind resources - Phase 1: The historical case

Michael Brower, AWS Truewind, USA

- The meteorology of the very large wind turbines

Lars Landberg, Risoe National Laboratory, Denmark

- Validation of the energy and uncertainty predictions for over 100 wind farms by comparison to actual metered production

Peter Raftery, Garrad Hassan and Partners, UK

Research & Development Strategy

09:00 - 10:30 Chairs: **Wiktor Raldow**, DG RTD, European Commission, Belgium

Peter Hjuler Jensen, Risoe National Laboratory, Denmark

- Introduction

Wiktor Raldow, European Commission

- Turbines

Pantelis S. Vionis, CRES, Centre for Renewable Energy Sources, Greece

- Blades and Rotors

Arno M. van Wingerde, Wind turbine Materials and Constructions Knowledge Centre WMC, The Netherlands

- Wind Ressources

George Kariniotakis, Ecole des Mines de Paris, Centre d'Energétique, France.

- Wind Farms

Rebecca Barthelmie, RISOE NATIONAL LABORATORY, Denmark

- Integration of Wind Power

Hugo Chandler, European Wind Energy Association, Belgium

- Wind Power Demonstration Projects

Matthias Grottko, WIP, Germany

10:30 - 11:00 Coffee break (Exhibition halls 1&2)



The Impact of Policies on Market Development

11:00 - 12:30 Chairs: **Oliver Schaefer**, *EREC, Belgium*

Pablo Eugui, *EHN, Spain*

- Update on the RES electricity directive
Alfonso Gonzalez Finat, *DG TREN, European Commission, Belgium*
- The new German renewable energy sources act (EEG)
Rainer Hinrichs-Rahlwes, *Director, Federal Ministry for Environment, Nature Protection and Nuclear Safety, Germany*
- An update of the wind energy legislation in Spain
Cayetano Hernández, *IDAE, Spain*
- Overview of legislative frameworks
Christian Kjaer, *EWEA, Belgium*
- Onshore progress and key development issues in the UK
Chris Tomlinson, *BWEA, UK*

12:30 - 14:00 Lunch (Exhibition hall 2)

Small Wind Industry Implementation Strategy (Location: Hospitality Suite in Exhibition Hall 2)

12:30 - 14:00 Chairs: **Jean Marc Noël**, *SEED, France*

Denis LeFebvre, *Vergnet, France*

Objectives: • Gather European small wind industry key players (manufacturers, engineering offices, experts, wind associations) to work out the best actions to promote this industry

- Discuss the direction small wind turbine manufacturers should take towards increased market growth
- Analyse the progress to date of the Small Wind Industry Implementation Strategy (SWIIS) - track records, market description, success and failures, recommendations
- Generate practical guides for decision-makers

Emerging International Wind Markets

14:00 - 15:30 Chairs: **Rick Sellers**, *IEA, France*

Dana Younger, *IFC, USA*

This session will present and discuss the issues surrounding globalisation of the wind industry and will take examples from key emerging markets.

- Wind power in China
Li Jungfeng, *Chinese Renewable Energy Industries Association, China*
- Brazil 1100 MW wind programme - Instruments and support schemes
Elverado Feitosa, *Brazilian Wind Energy Center, Brazil*
- A developers view
Alberto de Miguel, *EHN, Spain*

Finance Forum

14:00 - 15:30 Chairs: **Klaus Rave**, *Investitionsbank SH, Germany / Vice President, EWEA*

Kirsty Hamilton, *BCSE, UK*

- Can wind power projects reach investment grade?
Jan Willem Plantagie, *Standard & Poor, Germany*
- Project financing offshore wind energy projects
William Abraham, *Hammonds, UK*
- How to reduce the financial risks of a wind farm project
Helmut Klug, *DEWI, Germany*
- Non-recourse financing of wind projects
Lars Kolte, *Eksport Kredit Fonden EKF, Denmark*
- Mitigating Wind Financing Risks With Capital Market Solutions
Larry Uchill, *Brown Rudnick, UK*

Poster Session

14:00 - 15:30

A dedicated poster session will take place on the mezzanine level of the conference entrance. All authors are expected to be present at their posters during this session in order to present their work. The updated list of all accepted poster presentations can be found on page 13.

15:30 - 16:00 Coffee break (Exhibition halls 1&2)

Tuesday 23 November 2004

16:00 - 17:30

■ Business & Policy (Grand Hall)

■ Scientific (Severn)

■ Technical (Greenwich)

■ Workshops (Avon)

European & Global Markets

16:00 - 17:30 Chairs: **Alfonso González Finat**, DG TREN, European Commission, Belgium
Ian Mays, Renewable Energy Systems, UK

- **André Antolini**, Syndicat des Energies Renouvelables, France
- **Jaime Steve**, American Wind Energy Association, USA
- **Rakesh Bakshi**, Indian Wind Turbine Manufacturers Association, India
- **Oreste Vigorito**, ANEV, Italy
- **Antonio Sa da Costa**, APREN, Portugal
- **Ian Lloyd Besson**, Australian Wind Energy Association, Australia

The Science of Wind Energy II

16:00 - 17:30 Chair: **Peter Hauge Madsen**, Risoe, Denmark

- Investigation of the effects of grid transients and dynamics upon a hybrid renewable energy installation
James Conroy, Department of Electronic and Electrical Engineering UCD, Ireland
- Quantifying offshore wind resources from satellite wind maps: study area North Sea
Rebecca Barthelmie, Risoe National Laboratory, Denmark
- Extending an existing wind power forecasting system with probabilistic forecasts
Henrik Nielsen, IMM, DTU, Denmark
- Long term variation of wind potential: are we moving into a low NAO-cycle period?
Axel Albers, Deutsche WindGuard, Germany

Aerodynamics & Loads

16:00 - 17:30 Chairs: **Flemming Rasmussen**, Risoe National Laboratory, Denmark

Herman Snel, ECN, The Netherlands

- A new approach to calculate the turbulence intensity inside a wind farm
Arne Wessel, ForWind-Center for Wind Energy Research, Germany
- Wake measurements from the Horns Rev off-shore wind farm
Leo Jensen, Elsam Engineering, Denmark
- Modelling rotational augmentation based on engineering considerations and measurements
Cornelis Lindenburg, ECN, The Netherlands
- Empirical verification of active vibration control for 1MW wind turbine tower
Tsuyoshi Wakasa, Mitsubishi Heavy Industries, Ltd., Japan
- Determination of fatigue loading on a wind turbine with oil damping device
Kimon Argyriadis, Germanischer Lloyd WindEnergie GmbH, Germany

Grids & Growth

16:00 - 17:30 Chair: **Christian Kjaer**, EWEA, Belgium

- Tools and concepts to realise a high share of wind power in electrical networks
Martin Hoppe Kilper, ISET, Germany
- Developing the GB transmission system
Richard Ford, BWEA, UK
- System of global prediction and integration of wind power into electricity market
Alejandro Berenguer, EHN, Spain
- New market requirements on the electrical transmission system for offshore wind farms
Juergen Bernauer, ABB Utilities, Germany



17:30 - 19:00 Exhibitors reception & Renewable Connections reception - (Exhibition halls 1&2)



08:00 - 09:00 Registration, welcome coffee & poster session

Project Financing

- 09:00 - 10:30 **Chairs:** **Jean Michel Germa**, *France Energie Eolienne, France*
David Jones, *Allianz Specialised Investments, UK*
- Modern portfolio theory meets wind farms
John Dunlop, *Eufinium Management Ltd., UK*
 - Off-shore wind project finance - Lending, legal and insurance issues
Eriks Atvars, *HypoVereinsbank AG, Germany*
 - Risk assessment in wind power investments
Henrik Balle, *DONG, Denmark*
 - Windmill financing by securitisation - A life-cycle approach
John Chu, *Deloitte - Treasury & Capital Markets, The Netherlands*
 - Financing options for developers and utilities in major European wind markets
Jonathan Johns, *Ernst & Young, UK*

Measurements Methods and Techniques. Short Term Prediction. Climate Change

- 09:00 - 10:30 **Chair:** **Hans Bergstrom**, *Uppsala University, Sweden*
- Wind lidar evaluation at the Danish wind test site in Høvsøre
David Smith, *QinetiQ, UK*
 - Comparison of wind speed and power curve measurements using a cup anemometer, a LIDAR and a SODAR
Ioannis Antoniou, *Risoe National Laboratory, Denmark*
 - Probabilistic wind power forecasts in terms of quantiles
John Bremnes, *Norwegian Meteorological Institute, Norway*
 - Variability in the energy content of the wind over Scandinavia — a 101-year perspective
Cecilia Johansson, *Uppsala University, Sweden*

Latest Turbine Developments

- 09:00 - 10:30 **Chairs:** **Christian Nath**, *Germanischer Lloyd WindEnergie, Germany*
Gijs van Kuik, *TU Delft, The Netherlands*
- **Henrik Stiesdal**, *Bonus, Denmark*
 - **Pep Prats**, *Ecotècnia, Spain*
 - **Aloys Wobben**, *ENERCON GmbH, Germany*
 - **Enrique Pedrosa**, *Gamesa, Spain*
 - **Vincent Schellings**, *GE Wind Energy, Germany*
 - **Peter Quell**, *REpower, Germany*
 - **Henning Bey Enevoldsen**, *Vestas, Denmark*

Offshore

- 09:00 - 10:30 **Chairs:** **Bjarne Lundager Jensen**, *DWIA, Denmark / Vice President EWEA*
Gordon Edge, *BWEA, UK*
- Operation and maintenance of large offshore windfarms, based on experiences from Horns reef
Søren Vestergaard, *Elsam Engineering AS, Denmark*
 - The offshore potential
Peter Sistenich, *RWE Power, Germany*
 - 165 MW Nysted offshore wind farm. First year of operation - performance as planned
Per Volund, *Energí E2, Denmark*
 - Driving down the cost of offshore wind energy
Egon Poulsen, *Vestas Wind Systems AS, Denmark*
 - Enhancing health and safety in the offshore wind industry
David Farrier, *Powergen Renewables, UK*
 - Outcomes of the OWE workshop and Concerted action on Offshore Development (COD)
Ruud de Bruijne, *NOVEM, The Netherlands*

10:30 - 11:00 Coffee break (Exhibition halls 1&2)

Business & Policy (Grand Hall)

Scientific (Severn)

Technical (Greenwich)

Workshops (Avon)

CEO Vision - Future Structure of the Industry

- 11:00 - 12:30** Chair: **Mike O'Brien** MP, Energy Minister, DTI, UK
Introduction: Carl Tishler, Babcock & Brown Ltd., UK
- **Aloys Wobben**, ENERCON, Germany
 - **Juan Ignacio López**, Gamesa, Spain
 - **Anders Christensen**, LM Glasfiber, Denmark
 - **Pedro Barriuso**, Iberdrola Energías Renovables, Spain
 - **Kevin McCullough**, npower renewables, UK



Mike O'Brien



Pedro Barriuso



Juan Ignacio López



Kevin McCullough



Anders Christensen



Aloys Wobben

12:30 - 14:00 Lunch (Exhibition hall 2)

Offshore: Developments & Prospects

- 14:00 - 15:30** Chair: **Eddie O'Connor**, Airtricity, Ireland - **Michel Verhagen**, Ministry of Economic Affairs, The Netherlands
- Strategy of the German Government on the utilisation of offshore wind energy - Current status and future developments
Cornelia Viertel, Federal Ministry of Environment, Nature Protection and Nuclear Safety, Germany
 - Prospects for offshore wind energy from the Belgian continental shelf
Frans Van Hulle, 3E nv, Belgium
 - Offshore wind in the UK - from potential to reality
Gordon Edge, BWEA, UK
 - Offshore wind development in the UK and the Netherlands – A comparison
Ernst Van Zuylen, Evelop BV, The Netherlands
 - An examination of the law relating to offshore windfarms and the difficulties the European industry faces
Jonathan Lux, Ince & Co., UK

Improving Wind Resource Assessment

- 14:00 - 15:30** Chair: **Rebecca Barthelmie**, Risoe, Denmark
- A study of mountain valley winds using the MIUU mesoscale model
Hans Bergström, Uppsala University, Sweden
 - Flow in and near forests
Ebba Dellwik, Risoe National Laboratory, Denmark
 - An evaluation of the WAsP model in a coastal mountainous site in Norway
Erik Berge, Kjeller Vindteknikk AS, Norway
 - Resource analysis for water offshore of the UK
Dougal McQueen, CREST, UK

Electrical System Design & Control

- 14:00 - 15:30** Chair: **Jurgen Schmid**, ISET, Germany - **John Olav Tande**, SINTEF Energy Research, Norway
- Grid compliant offshore Wind power connections provided by FACTS and HVDC Solutions
Phill Cartwright, AREVA T&D, UK
 - Announcement of the large offshore wind farm horns Rev 2 and experience from prior projects in Denmark
Kent Sobrink, Eltra, Denmark
 - Ride-through behavior of ENERCON wind turbines - technical details and computational capabilities
Stefan Hartge, ENERCON GmbH, Germany
 - Simulation and optimisation of wind farm controllers
Poul Sørensen, Risoe National Laboratory, Denmark
 - Development of a methodology for the assessment of system operation impacts of integrating wind generation on a small island power system
Jeff Smith, Electrotek Concepts, USA

Innovative Components & Systems

- 14:00 - 15:30** Chair: **Peter Hjuler Jensen**, Risoe National Laboratory, Denmark - **Johannes Schiel**, VDMA, Germany
- Benefits of control centres in the operation of Electric Systems with high penetration of wind energy: Real experience
Ángeles Santamaría Martín, Iberdrola Energías Renovables, Spain
 - Advanced adiabatic compressed air energy storage for the integration of wind energy
Chris Bullough, Alstom Power Technology Centre, UK
 - Improved return on investment due to more powerful and high wind turbines
Frans Brughuis, Mecal Applied Mechanics BV, The Netherlands
 - Standardisation efforts and novel tools in wind turbine gearbox analysis
Peter Flamang, Hansen Transmissions International, Belgium
 - Multibrid M5000 - Installation and Operation of a 5 MW Turbine
Martin Lehnhoff, Aerodyn Energiesysteme GmbH, Germany



Market Structures

16:00 - 17:30 Chairs: **Corin Millais**, EWEA, Belgium
Marcus Rand, BWEA, UK

- Scaling of wind in Europe drives developer consolidation
Keith Daniel Hays, Emerging Energy Research LLC, Spain
- The business of wind: essential evolution
Carl Tishler, Babcock & Brown Ltd., UK
- Industry consolidation – Will it increase or decrease the price of WTGs?
Shane Woodroffe, PriceWaterhouseCoopers, United Kingdom
- Moving from oil and gas into wind - a shift in power
Henrik Balle, DONG, Denmark

Aeroelasticity & Loads

16:00 - 17:30 Chairs: **Gijs van Kuik**, TU Delft, The Netherlands

- Application of a modified Theodorsen model to yawed flow conditions and to aerodynamic damping: some results
Herman Snel, Energy Research Centre of the Netherlands, ECN, The Netherlands
- Analysis of internal drive train dynamics in a wind turbine
Joris Peeters, KUL, Belgium
- Enhancing the damping of wind turbine rotor blades, the DAMPBLADE project
Panagiotis Chaviaropoulos, Centre for Renewable Energy Sources, Greece
- Estimating aeroelastic damping of operational wind turbine modes from experiments
Morten Hansen, Risoe National Laboratory, Denmark

Offshore - Technology Trends

16:00 - 17:30 Chairs: **Peggy Friis**, Elsam, Denmark

Jos Beurskens, Energy Research Centre, The Netherlands,

- The impact of different wind and wave data sources
David Cerda Salzmann, Delft University of Technology, Offshore Engineering, The Netherlands
- Lowering costs by individual design of foundation structures
Henrik Carstens, Ramboll, Denmark
- The future of offshore wind power is built onshore
Esa Holttinen, Windarc, Finland
- Offshore wind turbine O&M through advanced service technology
Bob Grimley, GE Wind Energy, USA
- Reduction of ship collision risks for offshore wind farms - SAFESHIP
Henk den Boon, E-Connection, The Netherlands
- Offshore windfarm construction: A clear picture?
Kurt Thomsen, A2SEA, Denmark

Electrical System Design & Control

16:00 - 17:30 Chairs: **Martin Hoppe-Kilpper**, ISET, Germany

Frede Blåbjerg, Aalborg University, Denmark

- Grid code requirements for integrating wind turbines into the transmission-system
Wilhelm Winter, E.ON Netz GmbH, Germany
- Windfarms providing Ancillary services in Spain
Marc Sala, Ecotècnia s.c.c.l., Spain
- Certification of the power generation characteristics of wind energy converters
Karl-Heinz Weck, FGH e.V., Germany
- Grid connection of doubly fed induction generator wind turbines: A survey
Íñigo Martínez de Alegría, UPV EHU, Spain
- Dynamic models of wind farms for power system studies – status by IEA Wind R&D Annex 21
John Olav Tande, SINTEF, Norway

Thursday 25 November 2004

09:00 - 10:30



■ Business & Policy (Grand Hall)

■ Scientific (Severn)

■ Technical (Greenwich)

■ Workshops (Avon)

08:00 - 09:00 Registration, welcome coffee & poster session

Environmental Issues

09:00 - 10:30 Chairs: **Peter Ahmels**, BWE, Germany
Stefan Singer, WWF, Belgium

Rowena Langston, RSPB, United Kingdom

- Birds and wind - Science, politics and the law

Marcus Trinick, Bond Pearce Solicitors, United Kingdom

- First conclusions from the Danish Demonstration Project on offshore environmental issues

Charlotte Boesen, Energi E2, Denmark

- Environmental issues concerning offshore wind farms - Experiences from the Horns Rev 160 MW wind farm

Seffen Andersen, Elsam Engineering AS, Denmark

- Learning from the Spanish Experience to achieve best environmental practice in UK windfarm development

Harvey West, EHN, United Kingdom

Aerodynamics

09:00 - 10:30 Chair: **Panagiotis Chaviaropoulos**, CRES, Greece

- Aero-elastic wind turbine analysis using system identification

Benjamin Marrant, TU Delft, The Netherlands

- More power and less loads in wind farms: 'Heat and Flux'

Gustave Corten, ECN Wind Energy, The Netherlands

- A computational comparison of standard and pneumatic Gurney flaps using CFD

Conrad Trevelyán, Dulas Ltd., UK

- Using near wake measurements to improve BEM engineering models for yawed wind turbines

Tonio Sant, DUWIND, University of Technology, The Netherlands

Autonomous & Distributed Systems

09:00 - 10:30 Chairs: **Frans van Hulle**, 3E, Belgium

Per Lundsager, Risoe National Laboratory, Denmark

- Logistic modelling of an autonomous wind-driven desalination plant

Stavros Papathanassiou, National Technical University of Athens, Greece

- Potential of decentralised energy management considering fluctuating wind energy, household consumers and adjustable biogas generation

Rainer Klosse, ForWind, Center for Wind, Germany

- Wind diesel systems in developing countries

Bungo Ezawa, Lahmeer International, Germany

- Construction and commissioning of the utsira wind / Hydrogen stand-alone power system

Pal Eide, Hydro Oil and Energy, Norway

- A review of wind-diesel systems: CIEMAT's activities

Ignacio Cruz, CIEMAT, Spain



10:30 - 11:00 Coffee break (Exhibition halls 1&2)

Thursday 25 November 2004

11:00 - 12:30



Business & Policy (Grand Hall)

Scientific (Severn)

Technical (Greenwich)

Workshops (Avon)

Winning Hearts & Minds

11:00 - 12:30 Chairs: **David Still**, DTI, UK
Manuel Bustos, APPA, Spain

- Embrace the revolution
Alison Hill, BWEA, UK
- The dance of the turbines
Albert Jansen, SenterNovem, The Netherlands
- Offshore social acceptability at Horns Rev
Jette Kjaer, Elsam Engineering, Denmark
- A strategic approach to maximising community benefit of windfarms
Alan Mortimer, Scottish Power, UK

Systems, Grid Integration & Control

11:00 - 12:30 Chair: **Nikos Hatziargyriou**, NTUA, Greece

- Comparison of dynamic models for wind turbine grid integration studies
Maider Santos Mugica, CISAE, Spain
- IPSYS – A simulation tool for performance assessment and controller development of hybrid systems – modelling concept and verification
Henrik Bindner, Risoe National Laboratory, Denmark
- New concepts to integrate German offshore wind potential into electrical energy supply
Kurt Rohrig, Institut für Solare Energieversorgungstechnik, Germany
- Windfarm modelling for network analysis - Simulation and verification
Magni Palsson, SINTEF Energy Research, Norway

Condition Monitoring & Measurement

11:00 - 12:30 Chairs: **Troels Friis Pedersen**, Risoe National Laboratory, Denmark
David Molenaar, TU Delft, The Netherlands

- Fibre optic blade monitoring
Theo Verbruggen, ECN, The Netherlands
- Relative and integral wind turbine power performance evaluation
Axel Albers, Deutsche WindGuard, Germany
- On-line load tracking using standard turbine visualisation data
Andreas Reuter, RSBconsult GmbH, Germany
- Wind turbine/Generator drivetrain condition based monitoring
Florian Klug, General Electric - Global Research, Germany
- The Profiler Intercomparison Experiment (PIE)
Ioannis Antoniou, Risoe National Laboratory, Denmark
- Presentation of first results of LM conditional blade monitoring
Ivan Mortensen, LM Glasfiber, Denmark

Climate Change Policies

11:00 - 12:30 Chair: **Steve Sawyer**, Greenpeace International

- **Jos Delbeke**, DG ENV, European Commission, Belgium
- **Robert Kleiburg**, Shell Renewables, The Netherlands
- **Mike Grubb**, The Carbon Trust, UK
- **Jane Ellis**, OECD

Closing session

12:30 - 13:00 Chair: **Antoni Martinez**, Ecotècnia, Spain

- Conference summary - **Jos Beurskens**, ECN, The Netherlands
- Poster awards - Presented by **Peter Hjuler Jensen**, Risoe National Laboratory, Denmark
- Poul la Cour Prize - Presented by **Eddie O'Connor**, Airtricity, Ireland
- Closing Address - **Arthouros Zervos**, EWEA, Belgium

13:00 - 14:00 Buffet lunch & farewell cocktail

Poster presentations

Aerodynamics & Aeroacoustics

- 1 Loads for Offshore Wind Turbines, the 2nd edition of the GL guideline
Kimon Argyriadis, Germanischer Lloyd WindEnergie GmbH, Germany
- 2 Monitoring the Condition of Wind Turbine Blade Pitching Bearings Using Acoustic Emission
Joe Au, Brunel Centre for Manufacturing Metrology, Department of Design and Systems Engineering, United Kingdom
- 3 Optimum Project for Horizontal axis Wind Turbines 'OPHWT'
Kamoun Badreddinne, Faculty of Sciences of Sfax, Tunisia
- 4 A method to customize the power curve for improving expected energy production estimation of wind turbines in very complex terrain
Francesco Castellani, Department of Industrial Engineering - University of Perugia, Italy
- 5 Prediction of Wind Turbine Tip Noise using Large Eddy Simulation
Oliver Fleig, The University of Tokyo, Japan
- 6 The effect of Gurney flaps on wind turbine blade aerodynamics
Michael Graham, Imperial College, United Kingdom
- 7 Estimating long term wind distribution from short-term data set using a reference station.
Knut Harstveit, Norwegian Meteorological Institute, Norway
- 8 Aerodynamic Loads Calculation of a Horizontal Axis Wind Turbine Rotor in Combined Inflow Condition
Yutaka Hasegawa, Ecotopia Science Institute, Nagoya University, Japan
- 9 Optimum Project for Horizontal axis Wind Turbines 'OPHWT'
Ali Helali, Faculty of Sciences of Sfax, Department of Physics, Laboratory of Applied Physics L.P.A, Tunisia
- 10 Modelling large wind turbines to analyse aeroelastic stability using WOBBE, a fully nonlinear simulation tool
Jessica G Holierhoek, Delft University of Technology, Netherlands
- 11 Numerical Analysis of a Local Angle of Attack to HAWT Rotor Blade in Unsteady Flow Conditions
Hiroshi IMAMURA, Department of Mechanical Engineering, Nagoya University, Japan
- 12 Damages of wind turbines on Miyakojima Island by Typhoon Maemi in 2003
Takeishi Ishihara, The Okinawa Electric Power Co, Inc., Japan
- 13 Target Design Blade Loads in Complex Terrain
Andreas Knauer, Institute for Energy Technology, Norway
- 14 Performance improvement of airfoils for wind turbines by the modified vortex generator
Tetsuya Kogaki, National Institute of Advanced Industrial Science and Technology, AIST, Japan
- 15 Improvement of 3D steady stall models by analyses of the IEA field test measurements.
G Van Kuik, DUWIND, University of Technology, Netherlands
- 16 Development of the FOCUS-PHATAS wind turbine design tool
Cornelis Lindenburg, ECN, Netherlands
- 17 Wind tunnel study of the flow field around the blade of a HAWT
Takao Maeda, Mie University, Japan
- 18 Increase in the Savonius rotors efficiency via a parametric investigation
Jean-Luc MENET, ENSIAME, France
- 19 Assessment of One Year Wind Measurements on the First Offshore Wind Research Platform in the German Bight - FINO1
Thomas Neumann, Deutsches Windenergie-Institut GmbH, Germany
- 20 Development & validation of FVE model for wind turbine performance & wake geometry prediction
Hyunki Shin, School of Mechanical and Aerospace Engineering, Seoul National University, South Korea
- 21 Power Control of Active Stall Wind Turbines
Chris J Spruce, Vestas Wind Systems, United Kingdom
- 22 Wind power production in cold climates – The EU new Icetools Project
Bengt Tammelin, Finnish Meteorological Institute, Finland
- 23 Experimental Study of a Vertical Wind Turbine Using Mechanism of a Bird's Wing under Higher Wind Speeds
Yoshiaki Tanzawa, Nippon Institute of Technology, Japan
- 24 Extreme structural loads at non-extreme mean wind speeds
Niels Jacob Tarp Johansen, Wind Energy Department, Risø National Laboratory, Denmark
- 25 Frequency domain load calculation for offshore wind turbines including full system dynamics
Tim T.G Van Engelen, ECN, Netherlands
- 26 Influence of wind field generation methods on wind turbine fatigue loads
Dick Veldkamp, Vestas Wind Energy Systems A/S,
- 27 Power performance verification in complex terrain
Pantelis Vionis, Centre for Renewable Energy Sources, Greece

Autonomous and Hybrid Systems

- 1 Field test and first operating results of an innovative commercial stand-alone hybrid (wind-photovoltaic) plant.
Luis M Arribas, CIEMAT, Spain
- 2 Verification of improved lifetime models for batteries in hybrid systems
Henrik Bindner, Riso National Laboratory, Denmark
- 3 Practical aspects for small wind turbine applications
Athan Christodoulou, University of Patras, Greece
- 4 Experimental Validation and On Going Development of HySyS v.1.0 - Hybrid Power System Balance Analyser
Alexandre Costa,
- 5 Mechanical brakes for wind turbines today and tomorrow
Jörn Edzards, Hanning & Kahl, Germany

Poster presentations

- 6 Specificity of Vergnet's medium capacity wind energy systems and solutions for cyclonic areas
Denis LEFEBVRE, VERGNET, France
- 7 Beaufort Court – Zero Emissions Building
Julia K Rhodes, Renewable Energy Systems Ltd, United Kingdom
- 8 Computational Fluid Dynamic Modelling of wind speed enhancement through a building augmented wind concentration system
Antonio Rullan, Althechnica, United Kingdom
- 9 Offshore corrosion protection for wind turbines.
James Thick, International Protective Coatings, United Kingdom
- 10 Small Wind-Photovoltaic Hybrid System for isolated areas
Irantzu Urrutikoetxea, Fatronik, Spain
- 11 Dynamic Simulation Model of a Hybrid Power System: Performance Analysis
Ionel VECHIU, LIPSI - ESTIA, France
- 12 Design of a test bench for the analysis of a hybrid power system
Ionel VECHIU, LIPSI - ESTIA, France
- 13 Hybrid Wind/PV Power Generation System for Beacon
Shinji Wakao, Waseda University, Japan

Development of Measurement Methods

- 1 Power Performance Testing of the Bornay 1500 Inclined Neo Wind Turbine.
Felix Avia, CIEMAT, Spain
- 2 Structural Health and Fatigue Monitoring for Wind Turbine Towers
Chris Bagley, TWI Ltd., United Kingdom
- 3 Application of cylindrical coordinate manipulator in spot welding
Agnimitra Biswas, National Institute of Technology, India
- 4 Development of the 3 MW Multibrid® wind turbine
Georg Böhmeke, Winwind Oy, Finland
- 5 An Experimental Study on the Vibrational Characteristics of the Rotor Blade with Fiber Reinforced Plastics
Son Choong-Yul, Inha University, South Korea
- 6 Wind Turbine Blade Certification - NaREC's Large Scale Blade Test Facility
Richard S Court, New and Renewable Energy Centre, United Kingdom
- 7 The Wind Energy Cadastre of Georgia
Archil David Zedginidze, Scientific Wind Energy Centre Karenergo, Georgia
- 8 Thermoelastic stress measurement and acoustic emission monitoring in wind turbine blade testing
Andrew G Dutton, CCLRC Rutherford Appleton Laboratory, United Kingdom
- 9 Lightning protection of wind turbines
H V Erichsen, DELTA, Denmark
- 10 Irish Windfarm Connection Moratorium
Padraig Fleming, Commission for Energy Regulation, Ireland
- 11 Satellite based services for the wind industry
Birgitte R Furevik, Nansen Environmental and Remote Sensing Center, Norway
- 12 3D reference model for bearing connections
Theo D Gruiter, Mecal Applied Mechanics BV, Netherlands
- 13 Stress measurement of wind turbine subjected to rotor wake and complex terrain
Yoshiyuki Hayashi, Mitsubishi Heavy Industries co Ltd., Japan
- 14 Mobile Observation Method for Investigating Offshore Wind Characteristics
Tsutomu Hayashi, Tottori University, Japan
- 15 The performance and fault analysis of wind turbine generators in India
S Iniyar, Anna University, India
- 16 Wind Tunnel Tests for Development of Wind Turbine Technology at Mitsubishi Heavy Industries
Kai KARIKOMI, Mitsubishi Heavy Industries, LTD., Japan
- 17 Enhanced reliability of simulation models
Niels Last, Mecal Applied Mechanics BV, Netherlands
- 18 The Influence of Mounting Booms and Towers on Wind Speed Measured by Anemometers
Niall McMahon, Institute for Numerical Computation and Analysis, Ireland
- 19 Structural model validation by experimental modal analysis - Final Results
David P Molenaar, Delft University of Technology, Netherlands
- 20 Fatigue and residual strength degradation in wind turbine rotor blade composites
Rogier P.L Nijssen, Knowledge Centre Wind turbine Materials and Constructions, Netherlands
- 21 Accurate Wind Speed Measurements in Wind Energy
Troels F Pedersen, Risoe National Laboratory, Denmark
- 22 Fatigue in wind turbines due to ice loads
Esa Peltola, VTT Processes, Finland
- 23 Offshore measurements buoy versus measurement mast
Pim De Ridder, WEOM bv, Netherlands
- 24 Condition Based Monitoring Tool for Wind Energy Projects: A Case Study and a Cost Benefit Analysis
Dave Roberts, Prasentia LLC, United States
- 25 The "flavour" of the noise is important
Bo Soendergaard, DELTA, Denmark

Poster presentations

- 26 Influence of wind field generation methods on wind turbine fatigue loads Comparison with measurements
D Veldkamp, NEG Micon Holland-Delft University Wind Energy Research Institute,
- 27 Sounding Techniques in Wind Energy Applications
Pantelis Vionis, C.R.E.S., Greece
- 28 Automated Testing System for Rotor Blades
Juergen Wagner, IDASWIND, Germany
- 29 Wind turbine generator and components testing laboratory in Albacete, Spain
Rafael Zubiaur, Barlovento Recursos Naturales S.L., Spain
- 30 On the behaviour of large complex wind farms
Rafael Zubiaur, IDR-UPM, Spain

Electrical Components and Control

- 1 Advanced SCADA systems for Wind Power Plants
Christina Aabo, Vestas Wind Systems AS, Denmark
- 2 Generic Network Model for Wind Farm Control Scheme Design and Performance Assessment
Olimpo Anaya-Lara, UMIST, United Kingdom
- 3 Adjoint wind turbine modelling with ADAMS, Simulink and PSCAD/EMTDC
Petteri Antikainen, VTT, Finland
- 4 Transmission restrictions and wind power extension – case studies for Germany using stochastic modelling
Rüdiger Barth, University of Stuttgart, Institute of Energy Economics and the Rational Use of Energy, Germany
- 5 Variable Speed of Wind Turbine through Superimposed planetary Gear Systems for Installations of Constant Speed Generators without Power Electronics
Andreas Basteck, Voith Turbo GmbH, Germany
- 6 A six point approach to lightning protection for wind energy projects
Warwick P Beech, ERICO, United Kingdom
- 7 Robust multiobjective control of a variable speed wind turbine
Boubekeur BOUKHEZZAR, Automatic Control Department, France
- 8 1.5 kW Permanent Magnet Synchronous Generator Experimental Bench Test
Luis Cano, CIEMAT, Spain
- 9 Optimization of energy generation in wind farm through fuzzy control.
Paulo JC Costa, Instituto Politécnico de Viana do Castelo, Portugal
- 10 Performance and fire behaviour of step-up transformers in wind turbines
Jan DECLERCQ, Pauwels International, Belgium
- 11 General model of double fed induction machine used in wind power generators
Zeljko R Djuricic, University of Belgrade, Faculty of Electrical Engineering, Yugoslavia
- 12 Development of a new type of direct-drive generator
Staffan Engstrom, Agir Konsult AB, Sweden
- 13 Multilevel converters for wind turbines: Improving the performance
Igor Gabiola, ROBOTIKER, Spain
- 14 The Grid Connection Moratorium in Ireland – A Technical
Brian O Gallach, University College Cork, Ireland
- 15 Validity range of a 5th order, 3rd order and electromagnetic transient machine model
Miguel Garc, CIRCE-University of Zaragoza, Spain
- 16 A dynamic analysis to forecast the wind energy impact on the grid
Miguel García-Gracia, CIRCE-University of Zaragoza, Spain
- 17 AC-link: Innovative MW-Scale Clean Power SCR Converter for Direct Drive Generators
Darren R Hammell, Princeton Power Systems, United States
- 18 Network Studies for Offshore Wind Farm Grid Connections - Technical Need and Commercial Optimization
Jutta Hanson, ABB Utilities GmbH, Germany
- 19 Further studies on roof mounting wind turbine in the urban areas
Ahmad - Hemami, McGill University, Canada
- 20 Integration of Large Wind Farms in Island Electric Power Grids
Paul D Hopewell, GE Energy Consulting, United States
- 21 Test Results of the VENSYS 62
Stephan Jöckel, Vensys Energiesysteme, Germany
- 22 Wind Farm Power System Design Studies
Randell Johnson, Mott MacDonald, United Kingdom
- 23 The Secure and Reliable Integration of Large Wind Farms into Transmission Grids
Peter R Jones, ABB Ltd UK, United Kingdom
- 24 Verification of wind farms concerning the new utility requirements (E.ON etc.)
Helmut Klug, Deutsches Windenergie-Institut DEWI, Germany
- 25 Modeling and co-simulation of Wind generator control systems using Simulink interfaced to PSS/E
Kah leong Koo, Shaw Power Technologies International Ltd., United Kingdom
- 26 Turbulence Correction for Power Curves
Wiebke Langreder, Wind Solutions, Germany
- 27 Mitigation of voltage dips effects on wind generators
Nicolas Laverdure, IDEA, France
- 28 Simple representations of the dynamics of individual and cyclic pitch regulated wind turbines
William E Leithead, University of Strathclyde, United Kingdom

Poster presentations

- 29 Tower/blade interaction and the suppression of the tower fore-and aft mode by pitch control
William E Leithead, University of Strathclyde, United Kingdom
- 30 Wind Turbines and the Grid Codes
Vic Lilly, DeWind GmbH, Germany
- 31 Renewable Energy Impacts on the UK Transmission and Distribution Systems
S Luby, Mott MacDonald, United Kingdom
- 32 Voltage Stability of Wind Power based on Simulations and Field Measurements
Marcia Martins, Chalmers University, Sweden
- 33 A First Approach in Modelling Lightning Effects on Megawatt-Class On- and Off Shore Wind Turbines by Means of EMTP and MODELS
Yarú N Méndez-Hernández, Kassel University, Germany
- 34 Optimizing Reactive Power Control at a Large Windfarm
David R Mueller, Electrotek Concepts Inc., United States
- 35 MAWIPOC - a model to simulate the aggregated wind power time series for an area
Per Nørgaard, Risø National Laboratory, Denmark
- 36 Comparison of different 600 kW designs of a new permanent magnet generator for wind power applications
Eefje Peeters, Vito, Belgium
- 37 Modelling and simulation of VSC based HVDC connected offshore wind farm
Aishling E Reidy, University College Dublin, Ireland
- 38 Wind park reactive compensation with variable speed wind turbines
José Luis Rodríguez Amenedo, European University of Madrid, Spain
- 39 Study of impacts of a large penetration of wind power and distributed power generation as a whole on the Brazilian power system
Pedro AC Rosas, Centro Brasileiro de Energia Eólica, Brazil
- 40 New Approach for Modeling Doubly-Fed Induction Generator For Grid-Connection Studies
S K Salman, School of Engineering, The Robert Gordon University, United Kingdom
- 41 A Direct Power Control Method for Variable Speed Wind Turbines
Joris Soens, K.U.Leuven - ELECTA, Belgium
- 42 Wind Turbine Modelling & Grid Code Issues
Steven A Stapleton, Shaw Power Technologies International Limited, United Kingdom
- 43 Validated Wind Turbine Modelling – Meeting Industry Needs
Steven A Stapleton, Shaw Power Technologies International Limited, United Kingdom
- 44 Distribution Network Voltage Control with Wind Generation
Vincent Thornley, Econnect and UMIST, United Kingdom
- 45 A Fault Ride-Through System Based on a Controllable Resistor-Capacitor Network for Fixed-Speed Wind Turbines with Induction Generator
Trond Toftevaag, SINTEF Energy Research, Norway
- 46 A New Control Concept for Offshore Wind-Parks - Constant Speed Turbines on a Grid with Variable Frequency
Eckehard Troester, TU Darmstadt, Germany
- 47 Eliminating Voltage Instability Problems by Using Wind Farms with Doubly Fed Induction Generators
Georgios I Tsourakis, National Technical University of Athens, Greece
- 48 Estimated wind speed feed-forward control for wind turbine power optimisation
Eric L Van der Hooft, ECN, Netherlands
- 49 Design tool for wind turbine control algorithms
Tim G Van Engelen, ECN, Netherlands
- 50 Dynamic Inflow Compensation for Pitch Controlled Wind Turbines
Tim T.G Van Engelen, ECN, Netherlands
- Electrical Components and Control**
- 51 Torque Control for Variable Speed Wind Turbines
T.G van Engelen, ECN Wind Energy, Netherlands
- 52 Dynamic simulation of a direct drive wind turbine system with six-phase permanent magnet generator
Jose Luis Villate Martinez, Engineering Faculty, Deusto University, Spain
- 53 Integration of large-scale offshore wind power into the German grid and technical aspects of transmission system design
Ronald Voelzke, Siemens AG, Power Transmission & Distribution, Germany
- 54 Novel Design Method of Optimal Battery Capacity in Wind Power Generation System
Shinji Wakao, Waseda University, Japan
- 55 Field Experience of Fibre Optical Strain Sensors used for providing real time load information from wind turbine blades during operation.
J Wernicke, WindForce GmbH, Germany

Financing of Wind Projects

- 1 Portfolio-based generation planning: Implications for renewables and energy security
Shimon Awerbuch, Tyndall Centre Visiting Fellow SPRU - University of Sussex, United Kingdom
- 2 Wind Energy Development and Investment Opportunities in Oklahoma
Scott Greene, University of Oklahoma, United States
- 3 Why invest in wind resource assessments and second opinions?
Lars Landberg, Risø National Laboratory, Denmark

Poster presentations

- 4 Windfarm Development and Construction: Constraints and Considerations in Engineering Geological Assessments and Identification of Ground Risk
J Milner-Smith, Mott MacDonald, United Kingdom
- 5 Reasons and effects of uncertainty of site evaluations
Karsten Neuhoﬀ, University of Cambridge, United Kingdom
- 6 Wind turbine performance guarantee
Quirin W.M Sluijs, Ecofys bv, Netherlands
- 7 The Role of Partnership in Funding Windfarm Projects
Fintan M Whelan, Airtricity Ltd, Ireland

Liberalised Electricity Markets

- 1 The value of wind energy in the European Electricity Market- Application of a Stochastic fundamental model
Rüdiger Barth, University of Stuttgart, Institute of Energy Economics and the Rational Use of Energy, Germany
- 2 Economic evaluation of energy production systems with high wind power penetration Application to the Hellenic national interconnected systems
Nikos D Hatziaergyriou, NTUA, Greece
- 3 Aggregated wind power production and smoothing of hourly variations in the Nordic countries
Hannele K Holttinen, VTT Technical Research Centre of Finland, Finland
- 4 The Croatian wind energy supply curve
Laszlo Horvath, Energy Institute Hrvoje Pozar, Croatia
- 5 Optimizing Benefits from Wind Power Participation in Electricity Markets using Wind Power Forecasting Embedded with Uncertainty Management Tools
George Kariniotakis, Ecole des Mines de Paris - Center for Energy Studies, France
- 6 Economic impact of wind power forecast
Ignacio Marti, CENER, Spain

Market Development

- 1 Enel'S worldwide wind energy development status
Daniel Bercebal, Enel S.p.A., Italy
- 2 Performance and economic analysis of stand-alone hybrid wind-diesel power systems for remote area applications of Saudi Arabia
Ibrahim El-Amin, Electrical Engineering Department, KFUPM 1497, Saudi Arabia
- 3 Putting the Spin on Wind Energy Projects - Risk Management Issues in the Development of Wind Energy Projects in Australia
Richard Finlay-Jones, Wind Development Australia Pty Ltd, Australia
- 4 Wind Powering America: 5 years later
Lawrence T Flowers, NREL, United States

New Commercial and Innovative Wind Turbines

- 1 A holistic approach to wind power system design – meeting the park boundary requirements and optimising power output
Christina Aabo, Vestas Wind Systems AS, Denmark
- 2 Optimal wind turbine for offshore application
Christina Aabo, Vestas Wind Systems AS, Denmark
- 3 Technical Considerations of Wind Turbine Deployment in the Urban Environment
Jos Beurskens, Vector Wind Inc., Canada
- 4 IT solutions for integrating large wind farms into the power system and the de-regulated electricity markets
Phill Cartwright, AREVA T and D, United Kingdom
- 5 Smart Moulds for Cost Effective Blade Production
Matthew Chalk, Solent Composite Systems Ltd, United Kingdom
- 6 Design and Testing of a Novel Single-wire Suspended Down-wind Turbine
Takemi Ezaki, Fukuoka University, Japan
- 7 GE Wind Energy Offshore Activities - Development, On-site experience, and Turbine Enhancements
Thomas Fric, GE Wind Energy, Germany
- 8 Wind energy market in Poland.
Wojciech Glocko, EPA Spolka z o.o., Poland
- 9 Exploring parameters and costs of a wind/compressed air energy storage (CAES) power system with long-distance transmission
Jeffery B Greenblatt, Princeton University, United States
- 10 Effective Lightning Protection for Wind Turbine Generating Systems
Robert Harmon, Lightning Eliminators & Consultants, Inc., United States
- 11 Cost reduction and increased revenues for wind parks
F Hengeveld, Mecal Applied Mechanics BV, Netherlands
- 12 Optimised Gearbox design for modern wind turbines
Ray J Hicks, ORBITAL2 LTD, United Kingdom
- 13 Offshore turbine access systems
Peter Hodgetts, SeaRoc UK Limited, United Kingdom
- 14 GVT CONCEPT
Peter M Jamieson, Garrad hassan and partners limited, United Kingdom

Poster presentations

- 15 Horizontal Axis Wind Turbine with a transparent central part of swept area.
Yusup S Kamalov, Karakalpakstan Branch of the Uzbekistan Academy of Sciences, Uzbekistan
- 16 Finite element analysis of Cogging Torque Reduction techniques in a permanent magnet wind turbine generator
Ajay Kumar, BCET, Gurdaspur, India
- 17 Laddermill: Preliminary design analysis
Bas J Lansdorp, TU Delft, Netherlands
- 18 Wind Tunnel Tests on a Three-stage Out-phase Savonius Rotor
Yan Li, Tottori University, Japan
- 19 Additional Applications of Demand Side Management Techniques in Power Systems Integrated with Distributed Generation
Yun Seng Lim, Econnect Ltd, United Kingdom
- 20 The development of a vertical turbine for domestic electricity generation
Michael C Percival, Northumbria University, United Kingdom
- 21 New factory for gear units for large wind turbines
Georges Roobaert, Hansen Transmissions Int NV, Belgium
- 22 GE Energy 2.x, focus on Quality
Vincent Schellings, GE Energy, Germany
- 23 Analysis of Three-Dimensional Drive Train Vibrations Resulting from Rotor-, Structural- and Electrical- Excitations with Special Regard to the Gear Box Internals
Berthold J.E Schlecht, Technical University Dresden, Germany
- 24 Design and Development of a Composite Rotor Hub and Shaft Combination - Evaluation
Richard Schmidt, aerodyn Energiesysteme GmbH, Germany
- 25 AeroSmart5 - The new generation of small wind energy systems
Soenke Siegfriedsen, Aerodyn Energiesysteme GmbH, Germany
- 26 Wind Energy Research and Operations Experiences at Klipheuwel
Riaan Smit, Eskom, South Africa
- 27 Use of a Large Wind Turbine for Autoproduction
Lawrence D Staudt, Centre for Renewable Energy, Ireland
- 28 High-Resolution Modeling Enhancements to Improve Wind Forecast Quality
John W Zack, AWS Truewind, United States

Offshore : Developments and Prospects

- 1 Cable & Wireless Network Services
Chris Butler, Cable & Wireless Network Services, United Kingdom
- 2 Competitive Dynamics and Prospects in the Offshore Sector
Godfrey S Chua, Emerging Energy Research, United States
- 3 Comparison of different Certification Rules for Offshore Wind Turbines and introduction of new GL Wind Offshore Guidelines
Peter Dalhoff, Germanischer Lloyd WindEnergie GmbH, Germany
- 4 Development of stochastic and mechanical models for the estimation of collision risks of ships with offshore wind turbines within the EU-project SAFESHIP
Peter Dalhoff, Germanischer Lloyd WindEnergie GmbH, Germany
- 5 Wind Turbine Gearbox - Reliability and Wear Rates
Joe Downes, C.C.JENSEN, Denmark
- 6 BoardSafe - a method for safe access to offshore wind turbines
Staffan Engstrom, Agir konsult AB, Sweden
- 7 Newly Issued Design Standard for Offshore Wind Turbine Structures, DNV-OS-J101
Tove Feld, DNV Global Wind Energy, Denmark
- 8 The Ormonde Project, UK East Irish Sea – exploring the hydrocarbon to low-carbon economy transition frontier.
Ian R Hatton, Eclipse Energy Company Limited, United Kingdom
- 9 The Electrical Design and Connection of Super Cluster Offshore Wind Farms
Guy Nicholson, Econnect Ltd, United Kingdom
- 10 Financing Options for Wind farms - The Applicability and Attractiveness of Different Financing Options
Andrew Perkins, Ernst & Young, United Kingdom

Offshore: Technology Trends

- 1 Offshore Wind - Arklow Project
Nigel Crowe, GE Energy, United States
- 2 Scour Behaviour and Scour Protection for Monopile Foundations for Offshore Wind Turbines
Henk Den Boon, E-Connection Project BV, Netherlands
- 3 Dynamic Response of wind Turbine Towers in Waves and Currents
Michael Graham, Imperial College, United Kingdom
- 4 Wind and Wave Loads to Borkum Riffgrund Offshore Wind Farm
Søren T Larsen, Energi E2, Denmark
- 5 Beatrice Deepwater Offshore Windfarm FEED Study
Alan J MacLeay, Subsea 7, United Kingdom
- 6 Efficient offshore wind turbine foundations
Anders Moller, Densit AS, Denmark

Poster presentations

- 7 Optimising materials consumption in blades for off-shore wind turbines with due consideration to reliability and performance
Frank V Nielsen, LM Glasfiber, Denmark
- 8 The novel bucket foundation - development and research.
Soren A Nielsen, MBD Offshore Power A/S, Denmark
- 9 Aspects of Collision Risk Analyses for Ships with Offshore Wind Farms
Sven Otto, Germanischer Lloyd AG, Germany
- 10 Latest Technology Burial on UK Offshore Windfarms
John G Sinclair, Cns Renewables Ltd, United Kingdom
- 11 Offshore Foundation and Workmethods
Edwin Van de Brug, Ballast Nedam Offshore Energy, Netherlands
- 12 Der Ampelmann, safe and easy access to offshore wind turbines
Jan Van der Tempel, Delft University of Technology, Netherlands
- 13 Concrete foundations for wind turbines at 30 m sea depth
Per Volund, Energi E2, Denmark
- 14 Safer access to offshore wind turbines with less weather downtime
Mike J Watchorn, The Engineering Business Ltd, United Kingdom
- 15 The Dutch offshore wind energy programme of we@sea.
Chris Westra, Energy Research Centre of the Netherlands ECN, Netherlands
- 16 Fisheries Assessment and Compensation Schemes for the Offshore Wind Farm Industry
Edward Willsted, MacAlister Elliott & Partners Limited, UK

Policies and Programmes

- 1 Innovative field-oriented tools for noise and visual impact assessment
Nicolas ALBRIEUX, EDF, France
- 2 Wind Energy Facilitator: a Tool for Development and Social Acceptance
Jacquet Annabelle, APERe, Belgium
- 3 Conception of the wind energy using in Russia
Pavel P Bezrukikh, Head of the Department of Science and Technology Advance, Ministry of Energy of Russia, Russian Federation
- 4 UK Government policy's recent effect on wind farm development
Mike Blanch, AEAT Environment - Future Energy Solutions, United Kingdom
- 5 Assessment of "Carbon credits" impacts on wind energy projects profitability
Bernard L CHABOT, ADEME, France
- 6 Impact from Climate Change on the Wind Energy Potential in the Nordic Region
Niels-Erik Clausen, Risoe National Laboratory, Denmark
- 7 The Swedish wind pilot project
Fredrik Dahlström, Swedish Energy Agency, Sweden
- 8 Wind energy and the hydrogen economy: A new commercial opportunity?
Andrew G Dutton, CCLRC Rutherford Appleton Laboratory, United Kingdom
- 9 Safety concepts for offshore wind farms
Inga Fokuhl, GAUSS mbH, Germany
- 10 Supporting wind energy in the centralised mandatory pool in Ireland.
Brian O Gallachóir, University College Cork, Ireland
- 11 Wind Energy Development in Spain
Cayetano Hernández González, IDAE, Spain
- 12 Noise assessment and reduction of a 20kW wind turbine
P S Leung, Northumbria University, United Kingdom
- 13 Illuminating the wind turbines
P S Leung, Northumbria University, United Kingdom
- 14 Visual Impact Assessment of Wind Farms in South Australia
Andrew Lothian, Environmental Policy Solutions, Australia
- 15 Specific Recommendations for the Development of Wind Energy Projects in Cold Climates
Esa Peltola, VTT Processes, Finland
- 16 Identifying attitudes that predict acceptance of wind energy
Miguel J Schwartz, Duke University, United States
- 17 Intermittency, Planning and the UK Wind Resource
Graham Sinden, Environmental Change Institute, Oxford University, United Kingdom
- 18 Software animation tool for off shore wind farm SCIRA
Quirin Sluijs, Ecofys bv, Netherlands
- 19 Development of wind turbine technology in Spain. Evolution of the R&D activities
Enrique Soria, CIEMAT, Spain
- 20 The Use of the Kyoto Protocol's Joint Implementation (JI) Program to Help Finance Wind Plants Located in the Countries in Transition (CIT)
Michael Stavy, Consulting Energy Economist, United States
- 21 Successful Implementation of Wind Energy at Regional and Municipal Level
Marco Tieleman, CEA, Consultants on Energy and the Environment, Netherlands
- 22 Towards a 350 MW windfarm in the polder: through spatial planning, mediation and participation
Frans A Van der LOO, Novem, Netherlands

Poster presentations

- 23 Limiting the effects of wind turbines on radars and aviation
Michael J Watson, Pager Power Limited, United Kingdom
- 24 Bird collision recording for offshore wind farms
Edwin J Wiggelinkhuizen, Energy Research Centre of The Netherlands, Netherlands

Resource Assessments

- 1 Comparison of leading wind flow models in complex terrain
Neil G Douglas, Natural Power Consultants, United Kingdom
- 2 Uninterrupted 24-hour Surveillance of Wind Turbines; Improved Availability
Christina Aabo, Vestas Wind Systems AS, Denmark
- 3 Wind farm assessment: Comparative tools results in Rio Grande Do Sul - BRAZIL
Jorge A V Alé, PUCRS - Pontifical Catholic University of Rio Grande do Sul, Brazil
- 4 PRO-FAE: Tool for preliminary wind farms projects
Jorge A V Alé, PUCRS - Pontifical Catholic University of Rio Grande do Sul, Brazil
- 5 Small wind turbine testing: Indoor and out-door methodologies
Jorge A V Alé, PUCRS - Pontifical Catholic University of Rio Grande do Sul, Brazil
- 6 Stochastic analysis of the power output for a wind turbine generator
Edgar Anahua, ForWind - Center for Wind Energy Research, Institut of Physics, Car-von-Ossietzky University of Olde, Germany
- 7 An Evaluation of the Impact of Forecast Performance under the New Wind Energy Scheduling Regulations in Spain
Aaron Avagliano, GE Research, United States
- 8 Estimating offshore wind climatology in the mediterranean area, comparison of quickskat data with other methodologies
Rebecca Barthelmie, Institute of Atmospheric Sciences and Climate, ISAC-CNR, Italy
- 9 A wind energy atlas for Canada : Solving the challenge of large-area wind ressource mapping
Robert Benoit, RPN Environment Canada, Canada
- 10 Higher-order closure meso-scale modelling for wind resource estimates
Hans Bergström, Uppsala University, Sweden
- 11 Conception of the wind energy using in Russia
Pavel P Bezrukikh, Head of the Department of Science and Technology, Ministry of Energy of Russia, Russian Federation
- 12 Simulation of stochastic wind fields which encompass measured wind speed series – enabling time domain comparison of simulated and measured wind turbine loads
Wim Bierbooms, Section Wind Energy, Delft University of Technology, Netherlands
- 13 Outlining Special Class Requirements of Wind Turbines for La Ventosa, Oaxaca, Mexico
Marco A Borja, Electrical Research Institute, Mexico
- 14 Wind resource in the Dutch part of the North Sea
Arno J Brand, ECN Wind Energy, Netherlands
- 15 Wind Power Forecasting for Integration in Liberalised Markets
Richard A Brownsword, CCLRC Rutherford Appleton Laboratory, United Kingdom
- 16 A methodology for the elaboration of the wind atlas of Umbria Region.
Francesco Castellani, Department of Industrial Engineering - University of Perugia, Italy
- 17 Numerical Simulation of the Atmospheric Boundary Layer (ABL) over complex terrains
G Castro, D.I.Me. Ca - Università degli Studi di Cagliari, Italy
- 18 Smart Moulds for Cost Effective Blade Production
Matthew Chalk, Solent Composite Systems Ltd., United Kingdom
- 19 A measure for the wind power quality
Dimitris G Christakis, T.E.I of Crete - Wind Energy Laboratory, Greece
- 20 Resource Decrease by Large Scale Wind Farming
Gustave P Corten, ECN Wind Energy, Netherlands
- 21 Velocity Profiles Measured above a Scaled Wind Farm
Gustave P Corten, ECN Wind Energy, Netherlands
- 22 The Wind Conditions Over and Near Forests
JOSE L COSTA, CESA FEUP DEMEGI, Portugal
- 23 On Going Development of the UPM PREDICTION Project
Alexandre Costa, Polytechnical University of Madrid - UPM, Spain
- 24 Simulation of wind power fluctuations for a future park scenario based on hourly surface wind measurements
Marie-Laure Courty, EDF, France
- 25 On the accuracy of the weibull parameters estimators
Alexandre de Lemos Pereira, Brazilian Wind Energy Centre, Brazil
- 26 Meteodyn_WT : A software for wind resource assessment in complex terrain
Didier Delaunay, Meteodyn, France
- 27 Assessing Wind Turbines Potential thanks to CFD
Frederic DERKX, FLUIDYN UK, United Kingdom
- 28 European experience with wind turbines in icing conditions
Michael Durstewitz, ISET, Germany
- 29 The Moroccan Wind Energy Program
MUSTAPHA ENZILI, CDER, Morocco

Poster presentations

- 30 Variations on Gumbel's methodology towards the determination of extreme wind velocities
Paulo Fernandes, INEGI - Instituto de Engenharia Mecânica e Gestão Industrial, Portugal
- 31 Casandra Wind Power Forecasting Model
María Begoña Fernández, CASANDRA ENERGY SERVICES, S.A., Spain
- 32 Evaluation of turbulence models for wind energy production predictions
José Fernández Puga, Department of Particle Technology - University of Kaiserslautern, Germany
- 33 Limit of the logarithmic windprofil:\ Limit of the logarithmic windprofil or How to describe wind in heights above 80m?
Ulrich Focken, Forwind at University of Oldenburg, Germany
- 34 A comparison od MM5 and meteo mast wind profiles at Cabauw, The Netherlands and Wilhelmshaven, Germany
Ulrich Focken, Forwind at University of Oldenburg, Germany
- 35 Predictions and Correlations using 14-years wind data from Andros island
Dimitri Foussekis, C.R.E.S., Greece
- 36 Downscaling Wind Speed and Wind Power Forecasting Combining Mesoscale Outputs and Neural Autoregressive Models
Elena García Bustamante, CIEMAT, Spain
- 37 Wind Resource Map of New Brunswick
Nicolas Gasset, Universite de Moncton, Canada
- 38 A Comparison of the DMI-Hirlam and DWD-Lokalmodell for Short-Term Forecasting
Gregor Giebel, Risø National Laboratory, Denmark
- 39 Wind Energy Resource Assessment and Analysis of lower-level wind shear in the Southern Great Plains
Scott Greene, University of Oklahoma, United States
- 40 Wind and energy yield protection in complex terrain
Bert Hagenkort, Lahmeyer International, Germany
- 41 Adaptively-Integrated Meteorological Forecasts of Wind Speed
Kurt Hanson, Weather Services International, United States
- 42 Design and Assessment Issues For Urban Wind Power
Paul M Harrigan, GC Power Corporation, United States
- 43 Modeling and measuring atmospheric Icing at a coastal mountain in Norway
Knut Harsveit, Norwegian Meteorological Institute, Norway
- 44 Wind resource assessment program in a pilot Croatian region
Laszlo Horvath, Energy Institute Hrvoje Pozar, Croatia
- 45 Wind speed and power prediction using artificial neural networks
S JAYARAJ, National Institute of Technology Calicut, India
- 46 Sensitivity of MM5 wind prediction to domain size and PBL schemes
Pedro Angel Jimenez Muñoz, CIEMAT, Spain
- 47 Regional extreme wind climates and local winds in WaspEngineering 2.0.
Hans E Jørgensen, Risø National Laboratory, Denmark
- 48 Evaluation of the turbulence model in Waspengineering 2.0
Hans Jørgensen, Risø National Laboratory, Denmark
- 49 What Performance Can Be Expected by Short-term Wind Power Prediction Models Depending on Site Characteristics?
George Kariniotakis, Ecole des Mines de Paris, France
- 50 Generic Optimal Modelling and Selection of Reference Wind Farms in Regional Forecasting.
George Kariniotakis, Ecole des Mines de Paris, France
- 51 Power Forecasting in Complex Terrain based on MM5 coupled to CRES' Micrositing Model
Gil Lizzano, Centre for Renewable Energy Sources, CRES, Greece
- 52 Analysis of the wind energy potential in Serbia and Montenegro by comparative method
Dusan S Mikicic, Faculty for Electrical Engineering, Yugoslavia
- 53 Wind Energy Mapping using a Mesoscale Atmospheric Model and a Global Meteorological Database
Matthias Mohr, Renewable Energy Systems Ltd, United Kingdom
- 54 Computational wind power meteorology in complex terrain compared to measurements
Lisbeth Myllerup, Risø National Laboratory, Denmark
- 55 Ultra-short term wind speed forecasting
Henrik Aa Nielsen, Informatics and Mathematical Modelling, Technical University of Denmark, Denmark
- 56 Forecasting Short Term Wind Farm Production in Complex Terrain
Jeremy R Parkes, Garrad Hassan and Partners Ltd., United Kingdom
- 57 Feasibility study for the use of the mesoscale-model Eta for short term wind power forecasts in Brazil
Julio Cesar Passos, Universidade Federal de Santa Catarina, Brazil
- 58 Wind prediction deviations in complex terrain
Paulo F Pinto, IPB, Portugal
- 59 Comparing SiteWind with Standard Models for Energy Output Estimation
Rebecca Reed, AWS Truewind, LLC, United States
- 60 Daily operational wind power forecasting as a tool for grid integration of wind energy in Spain
Angel Rincón Ruiz, CASANDRA ENERGY SERVICES, S.A., Spain
- 61 Short term wind power prediction using the combination of three different methods
Sergio Saludes, CARTIF, Spain

Poster presentations

- 62 Feasibility of Wind Farms in Forest Clear-Cuts
Javier Sanz, Von Karman Institute for Fluid Dynamics, Belgium
- 63 Wind energy resource assessment in Cuba using the WAsP models Wind electrical generation potential in mountainous areas of the Island of Youth, in the south-southwest of Cuba.
Rolando Soltura, Cuban Institute of Meteorology, Cuba
- 64 Wind resource assessment in a region of complex terrain
Celine Spitzhorn, Parsons Brinckerhoff Ltd, United Kingdom
- 65 Comparing Wind-Prediction-Systems for Power-Predictions
Bernhard Stoevesandt, Forwind, Germany
- 66 Modelling Offshore Wind Profiles using Inertially Coupled Wave Boundary Layers
Jens H Tambke, ForWind Research Center, University of Oldenburg, Germany
- 67 Ice free anemometers
Bengt Tammelin, Finnish Meteorological Institute, Finland
- 68 An Analysis of Wind Resource Uncertainty in Energy Production Estimates
Mark A Taylor, AWS Truewind, LLC, United States
- 69 Simultaneity of the wind speed and power fronts
Teolan Tomson, Tallinn University of Technology, Estonia
- 70 A comparison of three methods for the estimation of turbulence intensity due to wake effects in wind farms.
Circe Triviño, Gamesa Eólica Engineering Department, Spain
- 71 Wind Structure in Complex terrain
Pantelis Vionis, C.R.E.S., Greece
- 72 An Assessment of Offshore Wind Energy Potential Using Mesoscale Model and GIS
Atsushi YAMAGUCHI, The University of Tokyo, Japan



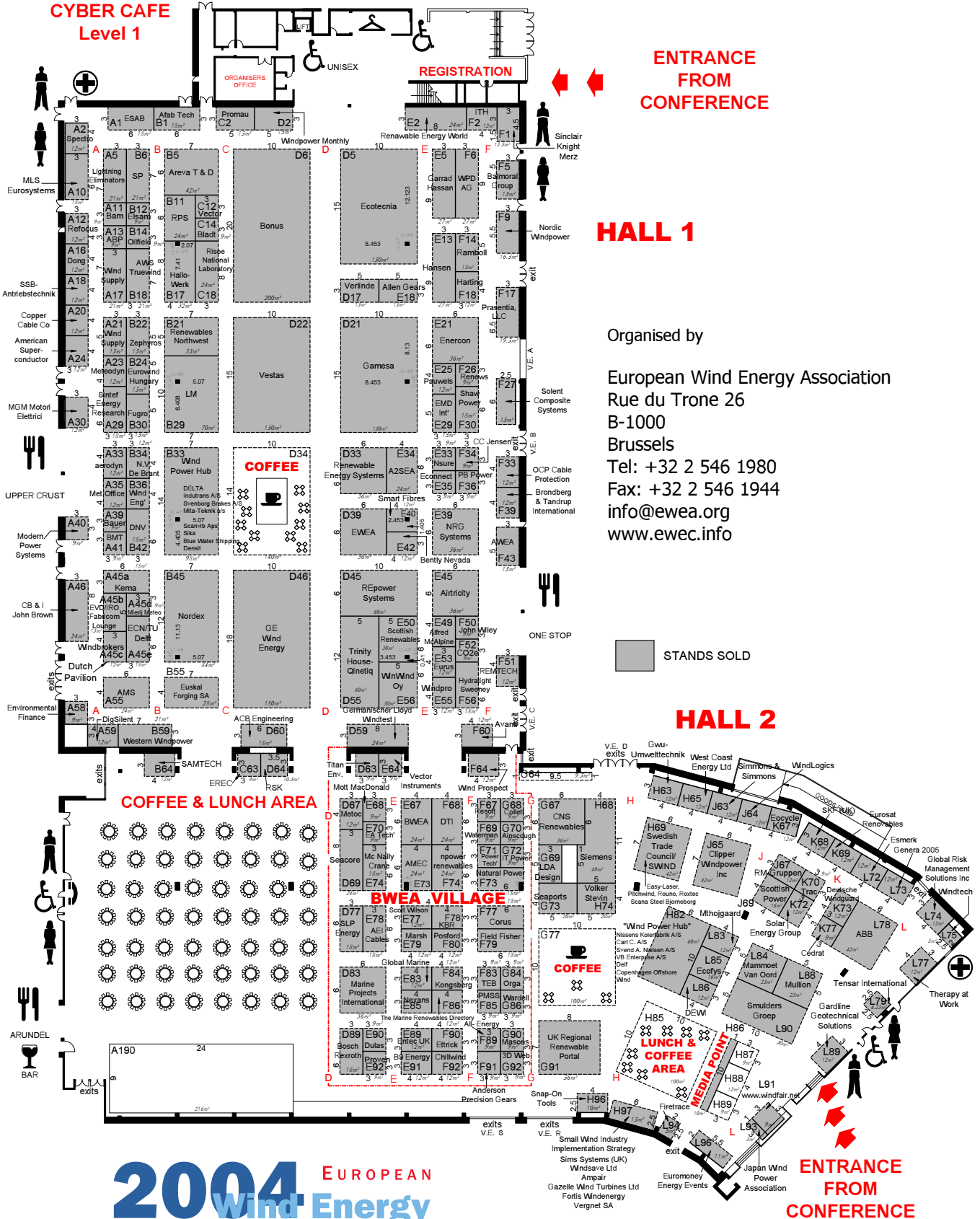
Exhibition Floor Plan

"Correct as of 27 October"

OVERVIEW - HALL 1 & 2

**EXHIBITORS
LOUNGE &
CYBER CAFE
Level 1**

**ENTRANCE
FROM
CONFERENCE**



HALL 1

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European Wind Energy Association
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HALL 2

2004 EUROPEAN
Wind Energy
Conference & Exhibition
22-25 November, London, UK
Business - Policy - Science - Technology

All Areas Are Shown Thus - 1:8m²

Layout Subject to Alteration at the Discretion of The Organiser

Exhibitor List

Company Name	Country	Boothnumber	Company Name
3d web technologies ltd	United Kingdom	G92	Eurowind Hungary Ltd.
A2SEA Limited	United Kingdom	E34	Eurus Energy UK Ltd
AB Pharos Marine Ltd	United Kingdom	F39	Euskal Forging S.A.
ABB Ltd	United Kingdom	L78	EVD, Agency for International Business and Coop
ABP Marine Environmental Research Ltd	United Kingdom	A13	Fabricom Oil & Gas
ACB-Engineering	France	D60	Field Fisher Waterhouse
AEI Cables Limited	United Kingdom	E78	Firetrace Ltd
aerodyn Energiesysteme GmbH	Germany	A33	Flash Technology
AeroVironment, Inc	USA	H63	Fortis Windenergy
AFAB TECH, LLC	USA	B1	Fugro Engineering Services Limited
Ainscough Crane Hire Ltd	United Kingdom	G70	Gamesa
AIRTRICITY	Ireland	E45	Garrad Hassan & Partners Limited
Alfred McAlpine Business Services	United Kingdom	E49	Gazelle Wind Turbines
Allen Gears Ltd	United Kingdom	E18	GE Energy
All-Energy Opportunities	United Kingdom	F89	GENERA 2005
AMEC Wind Energy	United Kingdom	E73	Germanischer Lloyd WindEnergie GmbH
American Superconductor	Germany	A24	Global Marine Systems Limited
American Wind Energy Association	USA	F43	Global Risk Management Solutions Inc.
AMPAIR Natural Energy	United Kingdom	H97	GWU-Umwelttechnik GmbH
AMS	United Kingdom	A55	Hailo-Werk
AMS (Italy)	Italy	A55	Hansen Transmissions
Anderson Precision Gears	United Kingdom	F91	HARTING
AREVA T&D	France	B5	Hydratight Sweeney Limited
Automatic Power Inc	USA	F39	Indutrans A/S
AVANTI	Denmark	F60	InterAC
AWS Truewind	USA	B18	IRO
B9 Energy O&M Ltd	United Kingdom	E91	IT Power
BALMORAL GROUP LTD	United Kingdom	F5	ITH-GmbH
BaltShip A/S	Denmark	H82	J. Müller Breakbulk Terminal GmbH & Co. KG
BAM Steel Structures	The Netherlands	A11	James & James/ Earthscan
BAUER Maschinen GmbH	Germany	A39	Japan Wind Power Association
Bently Nevada	USA	E42	John Wiley & Sons, Ltd
Bladt Industries A/S	Denmark	C14	KBR
Blue Water Shipping A/S	Denmark	B33	KEMA
BMT RENEWABLES LTD	United Kingdom	A41	KinTech
BONUS Energy A/S	Denmark	D6	Kongsberg Maritime
Bosch Rexroth Limited	United Kingdom	D89	Lankelma/Garolinde
British Wind Energy Association	United Kingdom	E67	LDA Design
BTI - Brøndberg & Tandrup International A/S	Denmark	F39	Lightning Eliminators & Consultants, Inc.
C C Jensen Ltd	United Kingdom	F34	LM Glasfiber
Carl C. A/S	Denmark	H82	M.G.M. motori elettrici S.p.A.
CB& John Brown Limited	United Kingdom	A46	Mammoet Van Oord BV
CEDRAT	France	K77	Marine Projects International Limited
Chillwind Ltd	United Kingdom	F92	Marsh Ltd
Clipper Windpower, Inc.	USA	J65	Masons
Cns Renewables Limited	United Kingdom	G67	MBD Offshore Power A/S
CO2e.com	United Kingdom	F52	McNally Crane Hire Ltd.
Collett Transport Ltd	United Kingdom	G68	Met Office
Copenhagen Offshore Wind, Conference & Exhibition 2005	Denmark	H82	METEODYN SAS
Copper Cable Company LTD	United Kingdom	A20	METOC PLC
Corus Construction & Industrial	United Kingdom	F77	Mierijj Meteo B.V.
CuxPort GmbH	Germany	G73	MISTVIND AB
Danish Export Group Association	Denmark	H82	MITA-TEKNIK A/S
Danish Wind Industry Association	Denmark	H82	MLS Eurosystems
DAVI - PROMAU s.r.l.	Italy	C2	Mott MacDonald
De Brandt N.V.	Belgium	B34	MT Højgaard a/s
DEIF A/S	Denmark	H82	Mullion Manufacturing Ltd.
DELTA	Denmark	B33	Nansen Environmental and Remote Sensing Cent
Densit a/s	Denmark	B33	Natural Power Consultants Ltd
Department of Trade and Industry	United Kingdom	F68	Nexans Deutschland Industries GmbH & Co. KG
Deutsche Windguard GmbH	Germany	K73	Nissens Kølerfabrik A/S
DEWI Deutsches Windenergie-Institut GmbH	Germany	L86	Nordex AG
DigSILENT GmbH	Germany	A59	Nordex UK Ltd.
DNV Global wind Energy	Denmark	B42	Nordic Windpower AB
DONG	Denmark	A16	npower renewables
Dulas Ltd	United Kingdom	E90	NRG System, Inc
DUWIND, Delft University Wind Energy Research Institute	The Netherlands	A45e	Nsure Renewables
EA TECHNOLOGY	United Kingdom	E70	OCF Cable Protection Ltd.
Easy-Laser® / Damalini AB	Sweden	H69	Oilfield Publications
ECN Wind Energy	The Netherlands	A45e	ORGA
Ecofys BV	The Netherlands	L85	Pauwels Transformers (Pauwels International N.V.)
ECONNECT LTD	United Kingdom	E35	PB Power
Ecotècnia s.coop.c.l.	Spain	D5	PitchWind Systems AB
Elsam Engineering	Denmark	B12	PMSS Limited
EMD International A/S	Denmark	E29	Posford Haskoning Ltd
Emdor Hafenförderungsgesellschaft e. V.	Germany	G73	Power Technology
ENERCON GmbH	Germany	E21	Prasentia
Entec UK Ltd	United Kingdom	E89	Proven Engineering Products Ltd.
Environmental Finance	United Kingdom	A58	QinetiQ
Eocycle	Canada	K67	RAMBØLL
ESAB	United Kingdom	A1	Refocus
Esmerk Ltd	United Kingdom	L72	REMTECH SA
Ettrick Riverside Management	United Kingdom	F90	Renewable Energy Systems (RES) Group
Euromoney Energy Events	United Kingdom	L96	Renewables Northwest
European Renewables Energy Council	Belgium	C63	Renews Limited
European Wind Energy Association - EWEA	Belgium	D39	REpower Systems AG
EUROSAT RENOVBLES, S.L.	Spain	K69	ReSoft Limited

Country	Boothnumber	Company Name	Country	Boothnumber
Hungary	B24	Risø National Laboratory	Denmark	C18
United Kingdom	E53	RM-Group A/S	Denmark	J67
Spain	B55	Roundo AB	Sweden	H69
The Netherlands	A45b	Roxtec International AB	Sweden	H69
The Netherlands	A45b	RPS Group Plc.	United Kingdom	B11
United Kingdom	F79	RSK ENSR Group Plc.	United Kingdom	D64
United Kingdom	L94	SAMTECH	Belgium	B64
USA	F39	Scana Steel Björneborg AB	Sweden	H69
The Netherlands	H97	Scanvib	Denmark	B33
United Kingdom	B30	Scott Wilson Oceans	United Kingdom	E77
Spain	D21	Scottish Renewables	United Kingdom	E50
United Kingdom	E5	ScottishPower	United Kingdom	J69
United Kingdom	H97	Seacore Ltd	United Kingdom	D69
Germany	D46	Seaports of Niedersachsen GmbH	Germany	G73
Spain	L73	Shaw Power Technologies Inc. PTI	United Kingdom	F30
Germany	D59	Siemens Power Transmission & Distribution	United Kingdom	H68
United Kingdom	E83	Sif Group BV	The Netherlands	L90
USA	L74	Sika Danmark A/S	Denmark	B33
Germany	H63	Simmons & Simmons	United Kingdom	J63
Germany	B17	Sims Systems (UK)	United Kingdom	H97
Belgium	E13	Sinclair Knight Merz	United Kingdom	F1
Germany	F18	SINTEF Energy Research	Norway	A29
United Kingdom	F56	SKF (U.K.) Limited	United Kingdom	K68
Denmark	B33	SLP Energy	United Kingdom	D77
France	D60	Small Wind Industry Implementation Strategy	Belgium	H97
The Netherlands	A45b	Smart Fibres Ltd	United Kingdom	E40
United Kingdom	G72	Smulders Groep BV	The Netherlands	L90
Germany	F2	Snap-on Tools	United Kingdom	H96
Germany	G73	Solar Energy Group Srl	Italy	K72
United Kingdom	E2	Solent Composite Systems Ltd	United Kingdom	F27
Japan	L93	SP	United Kingdom	B6
United Kingdom	F50	Spectro	United Kingdom	A2
United Kingdom	F78	SPT Offshore	The Netherlands	H74
The Netherlands	A45a	SSB-Antriebstechnik	Germany	A18
Spain	K69	SURVIVAL A/S	Denmark	H82
United Kingdom	F84	Svend A. Nielsen A/S	Denmark	H82
United Kingdom	L89	Svendborg Brakes A/S	Germany	B33
United Kingdom	G69	Swedish Trade Council / Swedish Wind Energy Technology Group	Sweden	H69
USA	A5	Tensar International Ltd.	United Kingdom	L79
Denmark	B29	The Engineering Business Ltd	United Kingdom	F83
Italy	A30	The Marine Renewables Directory	United Kingdom	F86
The Netherlands	L84	Therapy at Work	United Kingdom	L77
United Kingdom	D83	Titan Environmental Surveys Ltd	United Kingdom	D63
United Kingdom	E79	TRAC INTERNATIONAL LTD	United Kingdom	K70
United Kingdom	G90	Trinity House	United Kingdom	D55
Denmark	H82	TRIPOD Consult ApS	Denmark	H82
United Kingdom	E74	UK REGIONAL RENEWABLES PORTAL	United Kingdom	G91
United Kingdom	A35	VB-Enterprise A/S	Denmark	H82
France	A23	VECTOR AS	Norway	C12
United Kingdom	D67	Vector Instruments	United Kingdom	E64
The Netherlands	A45d	VERGNET	France	H97
Sweden	H69	VERLINDE	France	D17
Denmark	B33	Vestas Wind Systems A/S	Denmark	D22
Germany	A10	Volker Stevin Marine Contracting	The Netherlands	H74
United Kingdom	E68	Wardell Armstrong International	United Kingdom	G86
Denmark	L83	Waterman Group - Waterman Environmental	United Kingdom	F69
Belgium	L88	West Coast Energy Ltd	United Kingdom	H65
Norway	A41	Western Windpower Ltd	United Kingdom	B59
United Kingdom	F73	Wilhelmshavener Hafenwirtschaftsvereinigung e. V.	Germany	G73
Germany	E85	WILMINGTON PUBLISHING Ltd	United Kingdom	A40
Denmark	H82	Wind Engineering	United Kingdom	B36
Germany	B45	Wind Power Hub	Denmark	B33
United Kingdom	B45	Wind Power Hub	Denmark	H82
Sweden	F9	Wind Prospect Group	United Kingdom	F64
United Kingdom	F74	WINDBROKERS	The Netherlands	A45c
USA	E39	WindLogics Inc.	USA	J64
United Kingdom	E33	Windpower Monthly News Magazine	USA	D2
United Kingdom	F33	WindPro	United Kingdom	E55
United Kingdom	B14	Windsave Ltd.	United Kingdom	H97
United Kingdom	G84	WindSupply	United Kingdom	A17 + A21
Belgium	E25	Windtech International	The Netherlands	L75
United Kingdom	F36	WINDTEST Grevenbroich GmbH	Germany	D59
Sweden	H69	WINDTEST Iberica S.L.	Spain	D59
United Kingdom	F85	WINDTEST Kaiser-Wilhelm-Koog GmbH	Germany	D59
United Kingdom	F80	Winwind Oy	Finland	E56
United Kingdom	F71	WPD AG	Germany	F6
USA	F17	www.windfair.net	Germany	L91
United Kingdom	E92	Zephyros bv	The Netherlands	B22
United Kingdom	D55			
Denmark	F14			
United Kingdom	A12			
France	F51			
United Kingdom	D33			
United Kingdom	B21			
United Kingdom	F26			
Germany	D45			
United Kingdom	F67			

"Correct as of 8 November"

Programme Committee

First Name	Last Name	Company Name
André	Antolini	SIIF Energies
Felix	Avia	CIEMAT
Jos	Beurskens	ECN Wind Energy
Henrik	Bindner	RISOE
Manuel	Bustos	APPA
Hugo	Chandler	EWEA
Jamie	Chapman	OEM Development Corporation
Panayotis	Chaviaropoulos	Centre of Renewable Energy Sources (CRES)
Antonio	Crespo	Universidad Politecnica de Madrid, UPM
Nigel	Crowe	GE Energy
Komninou	Diamantaras	DG RTD - European Commission
Gordon	Edge	BWEA
Cornel	Ensslin	ISET
Dave	Farrier	Powergen
Peggy	Friis	Elsam
Andrew	Garrad	Garrad Hassan
Jean Michel	Germa	Cabinet Germa
Berthold	Hahn	ISET
Nikos	Hatzargyriou	NTUA
Peter	Hauge Madsen	RISOE
Siegfried	Heier	Universität Gh-Kassel
Andrew	Henderson	CEASA
Alison	Hill	BWEA
Hannele	Holtinen	VTT Energy
Martin	Hoppe-Kilpper	ISET
David	Infield	CREST
Nicholas	Jenkins	UMIST
Peter Hjuler	Jensen	RISOE National Laboratory
Peter Hjuler	Jensen	RISOE National Laboratory
Klaus	Kaiser	DeWind
Christian	Kjaer	EWEA
Lars	Landberg	RISOE
Wiebke	Langreder	Wind Solutions
Malcolm	Lodge	Island Technologies Incorporated
Per	Lundsager	RISOE National Laboratory
Ian	Mays	RES Ltd
David	Milborrow	DM Energy
Corin	Millais	EWEA
David	Molenaar	TU Delft
Alan	Moore	National Wind Power
Chris	Morris	Wind Prospect
Niels G.	Mortensen	RISOE
Paul	Morthorst	Risoe
Christian	Nath	Germanischer Lloyd WindEnergie GmbH
Eddie	O'Connor	Airtricity
Troels Friis	Pedersen	RISOE
Erik Lundtang	Petersen	RISOE National Laboratory
Josep	Prats	Ecotecnia
David	Quarton	Garrad Hassan & Partners Ltd
Marcus	Rand	BWEA
Flemming	Rasmussen	RISOE National Laboratory
Klaus	Rave	FGW
Kurt	Rohrig	ISET
Matthias	Schubert	RE Power
Henry	Seifert	DEWI
Herman	Snel	Netherlands Energy Research Foundation
Henrik	Stiesdal	Bonus Energy A/S
Bengt	Tammelin	Finnish Wind Power Association
John Olav	Tande	SINTEF Energy Research
Sven-Erik	Thor	FOI Aeronautics - FFA
Carl	Tishler	Babcock & Brown
Chris	Tomlinson	BWEA
Marcus	Trinick	Bond Pearce
Gerard	Van Bussel	TU Delft
Frans	Van Hulle	3E
Gijs	Van Kuik	TU Delft
Paul	Veers	Sandia
Pantelis	Vionis	CRES
Spyros	Voutsinas	National Technical University of Athens (NTUA)
Andreas	Wagner	GE Energy
Rick	Watson	University College Dublin

Conference Secretariat

Conference Chairman:

Antoni Martinez, Managing Director, Ecotecnia, Spain

Programme Chairman:

Arthouros Zervos, President, EWEA, Belgium / NTUA, Greece

Conference Secretariat (EWEA):

Corin Millais, CEO

Bruce Douglas, Marketing Director

Christian Kjaer, Policy Director

Luisa Colasimone, Communications Director

Silke Schlinnertz, Marketing Manager

Ivan Rubio, Events Manager

Hugo Chandler, Projects Manager

Frank Knecht, Policy Researcher

Ann Van Dyck, Office Administrator

Malgosia Bartosik, Event Assistant



EWEA

THE EUROPEAN WIND ENERGY ASSOCIATION

Steering Committee

First Name	Last Name	Company Name	Country
Jos	Delbeke	European Commission, DG Environment	Belgium
Bruce	Douglas	EWEA	Belgium
Andrew	Garrad	Garrad Hassan	UK
Martin	Hoppe-Kilpper	ISET	Germany
Karl	Kellner	European Commission, DG TREN	Belgium
Sarah	Kydd	DTI	UK
Thierry	Langlois D'Estaintot	European Commission, DG Research	Belgium
Ian	Mays	RES Ltd	UK
Eryl	McNally	MEP, European Parliament	UK
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Erik Lundtang	Petersen	RISOE National Laboratory	Denmark
Marcus	Rand	BWEA	UK
Klaus	Rave	FGW	Germany
Idoia	Rodes	GIC	Belgium
Andreas	Wagner	GE Wind Energy	Germany
Luc	Werring	European Commission, DG TREN	Belgium
Arthouros	Zervos	NTUA	Greece

Technical Visits



Thursday 25 November 14:00 - 19:15

RES Office visit

Leading wind farm developer, Renewable Energy Systems (RES), will host a technical visit of their head office on the afternoon of Thursday 25 November. Delegates will be given a guided tour of the site to see the range of renewable energy installations, including a large solar array (thermal and PV), biomass and a wind turbine visible from Britain's busiest motorway. The tour will be followed by drinks in the newly-opened visitor facility and exhibition area.

The new, eco-friendly head office for RES is a model of sustainable building design and energy generation. Using state-of-the-art building techniques, high standards of energy efficiency and on-site renewable energy technologies that provide all the buildings' heat and electricity, RES has created a world first in zero-emissions office development capable of replication around the world.



Programme	
14:00	Coach from conference venue
15:00	Arrive at Beaufort Court
15:00 - 15:20	Welcome: coffee and tea
15:20 - 16:45	Introductory presentations with Q&A
16:45 - 17:30	Tour of the site
17:30 - 18:15	Drinks and networking
18:15	Depart
19:15	Arrive back at conference venue

To book your place on this visit you must register on the RES exhibition stand (D33) in Hall 1.

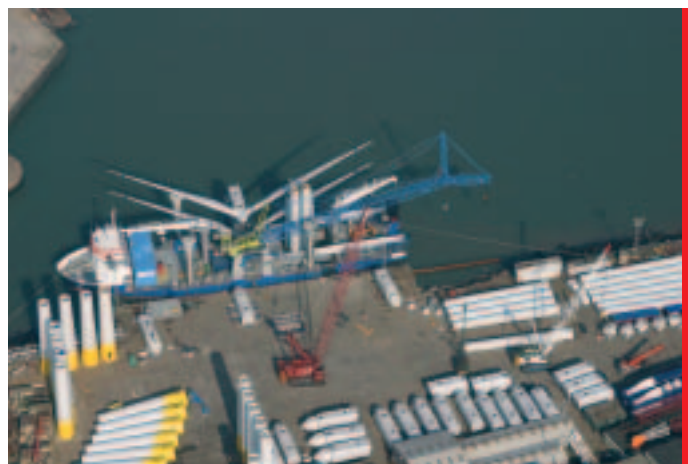


Tuesday to Thursday 23 - 25 November

Offshore Vessel and Vestas turbine

The MV OCEAN ADY vessel will be moored to the HMS Belfast, next to Tower Bridge, in Central London for the duration of the conference and will be carrying a Vestas V90-3.0 MW nacelle and blades. This is a purpose built (converted) A2SEA vessel for installation of offshore wind turbines. Together with her sister vessel MV Ocean Hanne, it has installed more than 175 turbines offshore since 2002.

The installation vessel is based on a unique concept, combining a 450t sea stabilised crane with a fast sea transport unit. A2SEA Ltd. together with its parent company A2SEA A/S, of Denmark is the world's leading company for offshore wind turbine installation. Reference projects: Horns Rev-DK (80 units), Nysted-DK (72 units) and Scroby Sands-UK (30 units with Seacore).



Visits to the boat will run on each day of the conference on a first come, first served basis. To book, you must sign in at the A2SEA exhibition stand (E34) in Hall 1.

Social Events

Monday 22 November 19.00 – 21:30

Conference reception - Madame Tussauds



The official conference reception will be held at Madame Tussauds, the world famous wax museum. Guests will be greeted with champagne and an interactive tour of London. This will be followed by drinks and canapés whilst surrounded by wax models of famous faces from the world of politics, sport and entertainment.

Entrance to the reception is for conference delegates only.
A valid badge and invitation must be shown at the entrance.



Tuesday 23 November 17:30 – 19:00

Exhibitors reception - Wembley Exhibition halls 1&2

The Exhibitors reception will take place on Tuesday in the exhibition halls. Cocktails and snacks will be served and musical entertainment provided from 17:30, finishing at 19:00.

Reception is free of charge to all conference delegates, exhibitors and exhibition visitors.
Valid badges must be shown at the entrance.



Renewable Connections

This reception, being jointly hosted by DTI and Ernst & Young will be held on the balcony overlooking the exhibition reception from 17:30 until 19:00. A representative of the DTI will give a brief speech assessing the progress that has been made by the wind energy community in meeting the UK Renewables Obligation.

Entrance to the reception is for conference delegates and is by invitation only.



Wednesday 24 November 19:30 – 23:30

Conference dinner - Natural History Museum

The Conference dinner will take place in the Central Hall, the largest and most impressive in the museum, and without doubt one of the most magnificent settings for a dinner in all of London. Its remarkable architecture includes a fine vaulted ceiling, sweeping double staircase, soaring gothic arches, intricately carved terracotta arches and a beautiful mosaic floor.

Cocktails and canapés will be served from 19:30 with dinner starting at 20:30 around the colossal skeleton of the dinosaur *Diplodocus*. This will be followed by an after dinner speech by **Mike O'Brien MP**, the recently appointed Minister for Energy, and a free bar until 23:30.

Delegates wishing to attend must buy tickets from the registration desks (EUR150/£100).
Places are limited and will be sold on a first come first serve basis.



A-Z Information

For all enquiries, please contact the conference organisers at the registration desks at the main entrance to the conference.

- BADGES** Delegates will not be admitted to the conference or exhibition venues without their badges. Replacement of lost badges will be charged at full rate.
- BUSINESS CENTRE** A business centre, sponsored by Simmons & Simmons, fully equipped with computers, internet connection, printers and fax is open to all conference delegates during opening hours (see map on inside back cover for location). Photocopies can be made at the Wembley information desk, in the main entrance to the conference, but must be paid for.
- CATERING** A welcome coffee will be served from 8:00 every morning, and after all morning and afternoon sessions, coffee and tea will be served in both exhibition halls. A free 3 course buffet lunch is served in Exhibition Hall 2 and the Cyber Café / Exhibitors lounge from 12:00 – 14:00 to all delegates and exhibition visitors. Dessert and coffee will then be served in the coffee areas in Halls 1 & 2. See the catering areas in the floor plan on the inside back page. On Thursday 25th, the lunch will be served in the Poster area of the conference centre.
- CONFERENCE DINNER** The Conference Dinner will take place on Wednesday 24 November at the National History Museum, in central London. Cocktails and canapés will be served from 19:30, with dinner starting at 20:30. Delegates wishing to attend must buy tickets in advance from the registration desks (€150 / £100). Places are limited and tickets will be available on a first signed basis.
- CONFERENCE MATERIALS** All participants will receive a Final Programme and Exhibition Guide.
- CONFERENCE RECEPTION** The Conference Reception will take place on Monday 22 November, at Madame Tussauds. Cocktails and canapés will be served from 19:00. Access to this reception is restricted to **conference delegates only**. A valid invitation and conference badge must be shown at the entrance.
- CYBER CAFÉ** A free cyber café with 10 computers linked to the internet is located on the balcony overlooking Exhibition Hall 1
- EMERGENCIES** Police, Fire Dept., Ambulance service: **999**
- EXHIBITORS RECEPTION** The Exhibitors Reception will take place on Tuesday 23 November from 17:30, in the Exhibition Halls, hosted by Hamburg Messe. Drinks and snacks from a range of European countries will be served and musical entertainment provided. This reception is free of charge to all conference delegates and exhibition visitors.
- LONDON** Visit the following website for maps and information on this vibrant and exciting city: www.visitlondon.com
- MONEY** The currency in United Kingdom is Pound Sterling (£).
- POSTER PRESENTERS** All poster presenters must mount their posters in the correct location, on the boards provided, from 12:00 on Sunday 21 November. There will be attendants available to assist with locating the correct board and to supply fixing/mounting materials. Presenters are requested to have their posters mounted before the start of the opening session at 10:30, Monday 22 November. See below for Poster session details.
- POSTER SESSION** A dedicated poster session will take place on the mezzanine level of the conference entrance at 14:00 on Tuesday 23 November. All authors are expected to be present at their posters during this session in order to present their work. The updated list of all the accepted poster presentations can be found on page 13.
- PROCEEDINGS** Proceedings containing all relevant information, papers, presentations, photos and videos will be dispatched to all conference delegates following the conference, in CD-Rom format. A paper copy of the scientific proceedings containing papers of all scientific oral presentations will be given out to all delegates attending the scientific track of the conference.
- TAXIS** Taxis must be ordered in advance from the Wembley information desk. You must allow at least 20 minutes for them to arrive.
- VENUE** *The Wembley Conference & Exhibition Centre* is purpose built for flexibility and accessibility, offering visitors a first-class venue for business and public events. The exhibition halls and conference rooms are located within the same building (less than 5mins walk from each other). Ideally located in North-West London, the venue boasts the best accessibility of all London venues by any mode of transport. For more information visit www.wembley.co.uk