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Scientific Track

Peer review process
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

Welcome Coffee

npower renewables
UK

Conference Programme

Monday 22 November 2004

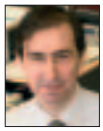
10:00 - 17:30

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


Antoni Martínez


Patricia Hewitt


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**

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*

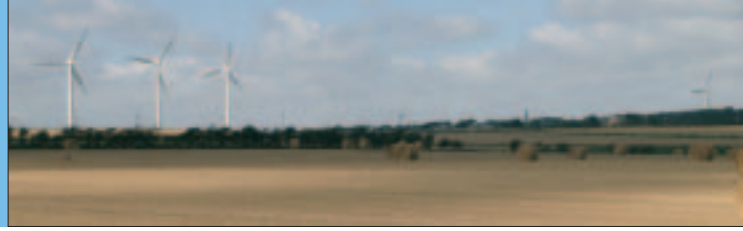
- To reduce power programme imbalance by using wind power forecasts
  Arno Brand, *ECN Wind Energy, The Netherlands*
- Comparison of corrections to site wind speeds in the offshore environment: value for short-term forecasting
  Rebecca Barthelmie, *Risoe National Laboratory, Denmark*
- The effects of 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 Grottke, *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 (manufactures, 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)

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, *Energi 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)

Wednesday 24 November 2004

11:00 - 15:30

Business & Policy (Grand Hall) | Scientific (Severn) | Technical (Greenwich) | Workshops (Avon)

CEO Vision - Future Structure of the Industry


Mike O'Brien


Pedro Barriuso


Juan Ignacio López


Kevin McCullough


Anders Christensen


Aloys Wobben

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*

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 Viertl, *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 developme nt 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 Bergstøm, *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*

19:30 **Conference dinner - Natural History Museum**

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 Trevelyan, *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)

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
Takeshi 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
Hyungki Shin, School of Mechnical 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

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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
Jürn Edzards, Hanning & Kahl, Germany

6 Specificity of Vergnet's medium capacity wind energy systems and solutions for cyclonic areas
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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
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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

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1 Power Performance Testing of the Bornay 1500 Inclin 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
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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
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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
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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
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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
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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

26 Influence of wind field generation methods on wind turbine fatigue loads Comparison with measurements
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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

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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 Djurisic, 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

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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
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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
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Aishling E Reidy, University College Dublin, Ireland
38 Wind park reactive compensation with variable speed wind turbines
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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
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Vincent Thornley, Econnect and UMIST, United Kingdom
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Eckehard Troester, TU Darmstadt, Germany
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48 Estimated wind speed feed-forward control for wind turbine power optimisation
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49 Design tool for wind turbine control algorithms
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50 Dynamic Inflow Compensation for Pitch Controlled Wind Turbines
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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

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1 Porfolio-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 InvestmentOpportunities in Oklahoma
Scott Greene, University of Oklahoma, United States
3 Why invest in wind resource assessments and second opinions?
Lars Landberg, Risoe National Laboratory, Denmark

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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

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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 Hatziargyriou, 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

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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 Lightnin 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

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15 Horizontal Axis Wind Turbine with a transparent central part of swept area.
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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
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18 Wind Tunnel Tests on a Three-stage Out-phase Savonius Rotor
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19 Additional Applications of Demand Side Management Techniques in Power Systems Integrated with Distributed Generation
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20 The development of a vertical turbine for domestic electricity generation
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21 New factory for gear units for large wind turbines
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22 GE Energy 2.x, focus on Quality
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24 Design and Development of a Composite Rotor Hub and Shaft Combination - Evaluation
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25 AeroSmart5 - The new generation of small wind energy systems
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26 Wind Energy Research and Operations Experiences at Klipheuwel
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28 High-Resolution Modeling Enhancements to Improve Wind Forecast Quality
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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
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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
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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 Connecton 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

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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

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 Willsteed, MacAlister Elliott & Partners Limited, UK

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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
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10 Supporting wind energy in the centralised mandatory pool in Ireland.
Brian O Gallachóir, University College Cork, Ireland
11 Wind Energy Development in Spain
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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
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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
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22 Towards a 350 MW windfarm in the polder: through spatial planning, mediation and participation
Frans A Van der LOO, Novem, Netherlands

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

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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 - Pontificial Catholic University of Rio Grande do Sul, Brazil
4 PRO-FAE: Tool for preliminary wind farms projects
Jorge A V Alé, PUCRS - Pontificial Catholic University of Rio Grande do Sul, Brazil
5 Small wind turbine testing: Indoor and out-door methodologies
Jorge A V Alé, PUCRS - Pontificial 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
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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
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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
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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.
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17 Numerical Simulation of the Atmospheric Boundary Layer (ABL) over complex terrains
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18 Smart Moulds for Cost Effective Blade Production
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19 A measure for the wind power quality
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20 Resource Decrease by Large Scale Wind Farming
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21 Velocity Profiles Measured above a Scaled Wind Farm
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22 The Wind Conditions Over and Near Forests
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23 On Going Development of the UPMPREDICTION Project
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24 Simulation of wind power fluctuations for a future park scenario based on hourly surface wind measurements
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26 Meteodyn_WT : A software for wind resource assessment in complex terrain
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27 Assessing Wind Turbines Potential thanks to CFD
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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, Risoe 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

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Kurt Hanson, Weather Services International, United States

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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 Evalulation 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.
Geroge Kariniotakis, Ecole des Mines de Paris, France

51 Power Forecasting in Complex Terrain based on MM5 coupled to CRES' Micrositing Model
Gil Lizcano, 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, Risoe 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 anemometters
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

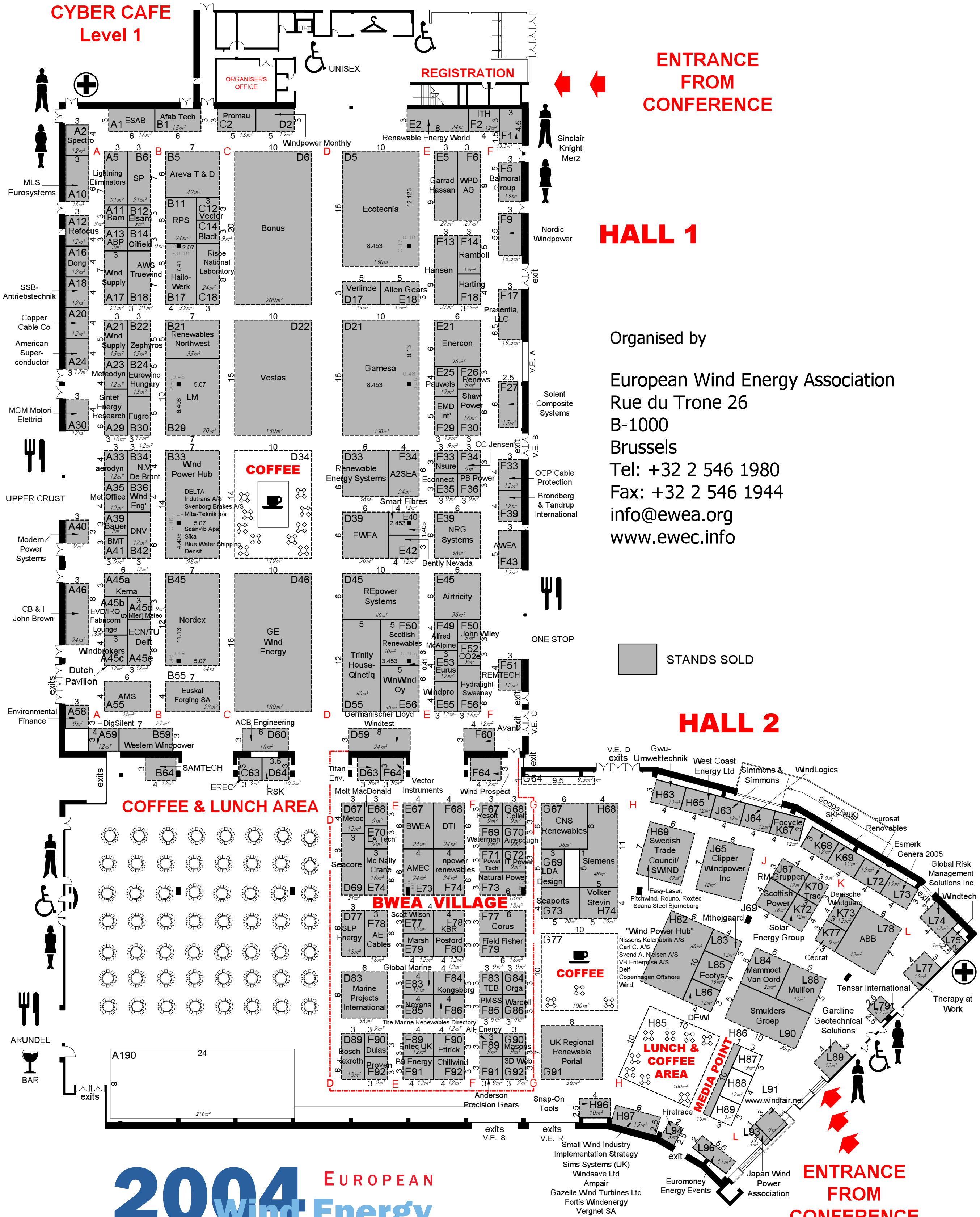
70 A comparison of three methods for the estimation of turbulence intensity due to wake effects in wind farms.
Circe Triviño, Gamesa Eólica Engineering Department, Spain

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

"Correct as of 27 October"

OVERVIEW - HALL 1& 2



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

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Chillwind Ltd	United Kingdom	F92
Clipper Windpower, Inc.	USA	J65
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CO2e.com	United Kingdom	F52
Collett Transport Ltd	United Kingdom	G68
Copenhagen Offshore Wind, Conference & Exhibition 2005	Denmark	H82
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Corus Construction & Industrial	United Kingdom	F77
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Ecotècnia s.coop.c.l.	Spain	D5
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European Renewables Energy Council	Belgium	C63
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Eurus Energy UK Ltd
Euskal Forging S.A.
EVD, Agency for International Business and Coop
Fabricom Oil & Gas
Field Fisher Waterhouse
Firetrace Ltd
Flash Technology
Fortis Windenergy
Fugro Engineering Services Limited
Gamesa
Garrad Hassan & Partners Limited
Gazelle Wind Turbines
GE Energy
GENERA 2005
Germanischer Lloyd WindEnergie GmbH
Global Marine Systems Limited
Global Risk Management Solutions Inc.
GWU-Umwelttechnik GmbH
Hailo-Werk
Hansen Transmissions
HARTING
Hydratight Sweeney Limited
Indutrans A/S
InterAC
IRO
IT Power
ITH-GmbH
J. Müller Breakbulk Terminal GmbH & Co. KG
James & James/ Earthscan
Japan Wind Power Association
John Wiley & Sons, Ltd
KBR
KEMA
KinTech
Kongsberg Maritime
Lankelma/Garolinde
LDA Design
Lightning Eliminators & Consultants, Inc.
LM Glasfiber
M.G.M. motori elettrici S.p.A.
Mammoet Van Oord BV
Marine Projects International Limited
Marsh Ltd
Masons
MBD Offshore Power A/S
McNally Crane Hire Ltd.
Met Office
METEODYN SAS
METOC PLC
Mierij Meteo B.V.
MISTVIND AB
MITA-TEKNIK A/S
MLS Eurosystems
Mott MacDonald
MT Højgaard a/s
Mullion Manufacturing Ltd.
Nansen Environmental and Remote Sensing Cent
Natural Power Consultants Ltd
Nexans Deutschland Industries GmbH & Co. KG
Nissens Kølerfabrik A/S
Nordex AG
Nordex UK Ltd.
Nordic Windpower AB
npower renewables
NRG System, Inc
Nsure Renewables
OCP Cable Protection Ltd.
Oilfield Publications
ORGA
Pauwels Transformers (Pauwels International N.V.
PB Power
PitchWind Systems AB
PMSS Limited
Posford Haskoning Ltd
Power Technology
Prasentia
Proven Engineering Products Ltd.
QinetiQ
RAMBØLL
Refocus
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Renewable Energy Systems (RES) Group
Renewables Northwest
Renews Limited
REpower Systems AG
ReSoft Limited

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Spain	L73
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Roxtec International AB	Sweden	H69
RPS Group Plc.	United Kingdom	B11
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SAMTECH	Belgium	B64
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The Marine Renewables Directory	United Kingdom	F86
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Titan Environmental Surveys Ltd	United Kingdom	D63
TRAC INTERNATIONAL LTD	United Kingdom	K70
Trinity House	United Kingdom	D55
TRIPOD Consult ApS	Denmark	H82
UK REGIONAL RENEWABLES PORTAL	United Kingdom	G91
VB-Enterprise A/S	Denmark	H82
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Wilhelmshavener Hafenwirtschaftsvereinigung e. V.	Germany	G73
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Windsave Ltd.	United Kingdom	H97
WindSupply	United Kingdom	A17 + A21
Windtech International	The Netherlands	L75
WINDTEST Grevenbroich GmbH	Germany	D59
WINDTEST Iberica S.L.	Spain	D59
WINDTEST Kaiser-Wilhelm-Koog GmbH	Germany	D59
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WPD AG	Germany	F6
www.windfair.net	Germany	L91
Zephyros bv	The Netherlands	B22

"Correct as of 8 November"

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Andrew	Garrad	Garrad Hassan
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Peter Hjuler	Jensen	RISOE National Laboratory
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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
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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
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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

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Programme Chairman:

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

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Bruce Douglas, Marketing Director
Christian Kjaer, Policy Director
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Silke Schlinnertz, Marketing Manager
Ivan Rubio, Events Manager
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Malgosia Bartosik, Event Assistant

EWEA
THE EUROPEAN WIND ENERGY ASSOCIATION

Steering Committee

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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

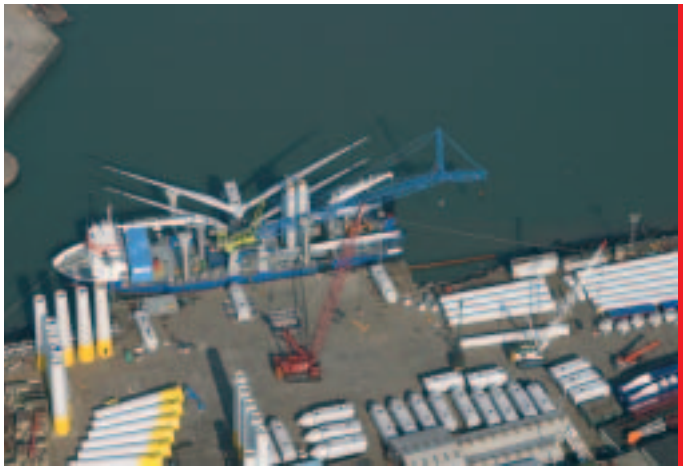
To book your place on this visit you must register on the RES exhibition stand (D33) in Hall 1.

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 mozaic 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 loungefrom 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 canapes 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