2003 EWEC

European Wind Energy Conference & Exhibition

Conferencia y Exposición Europeas de Energía Eólica

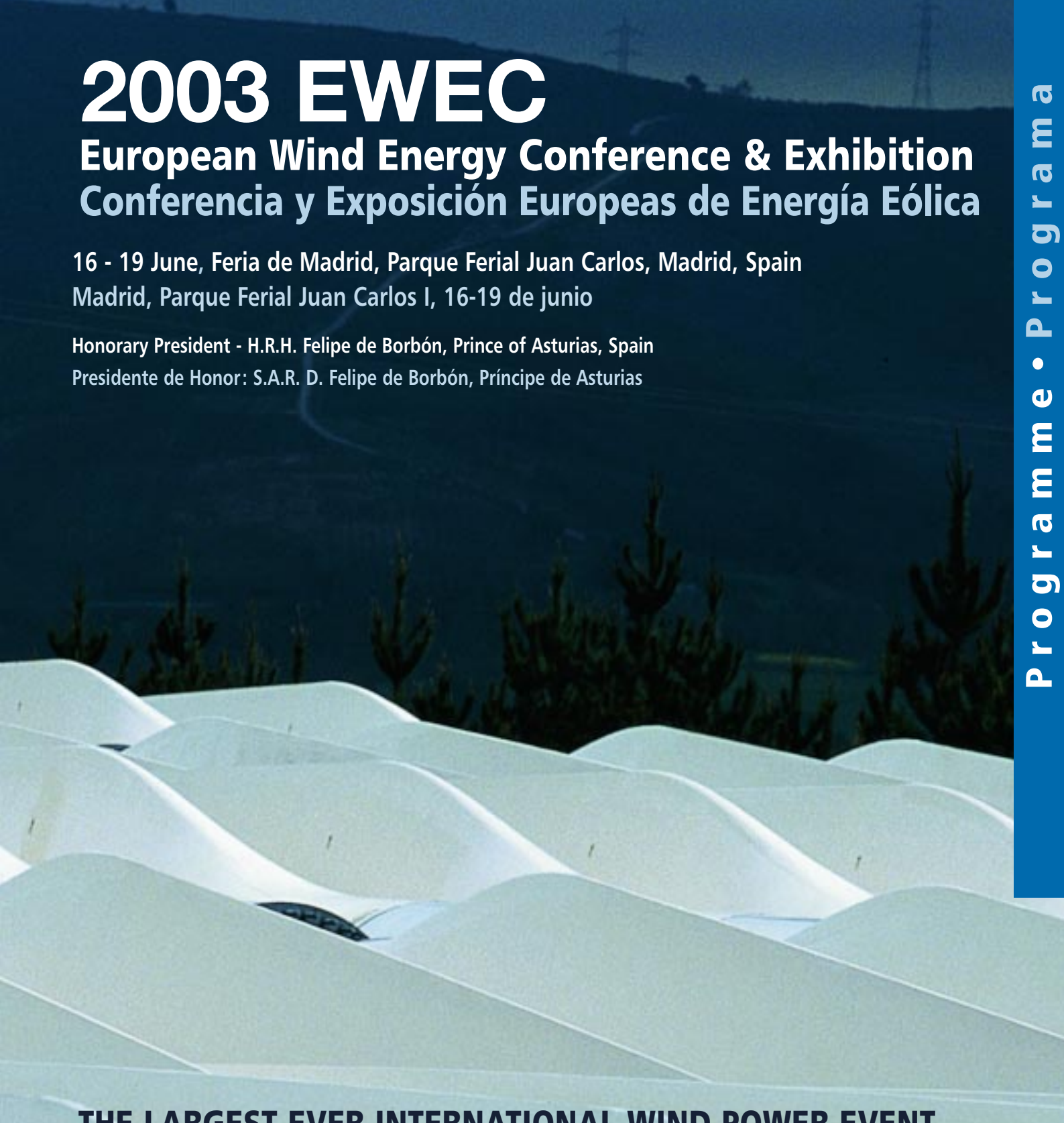
16 - 19 June, Feria de Madrid, Parque Ferial Juan Carlos, Madrid, Spain

Madrid, Parque Ferial Juan Carlos I, 16-19 de junio

Honorary President - H.R.H. Felipe de Borbón, Prince of Asturias, Spain

Presidente de Honor: S.A.R. D. Felipe de Borbón, Príncipe de Asturias

Programme • Programa



THE LARGEST EVER INTERNATIONAL WIND POWER EVENT

EL MAYOR ACONTECIMIENTO EÓLICO INTERNACIONAL

Supported by:
Con el apoyo de:

MINISTERIO DE ECONOMÍA — IDAE Instituto para la Diversificación y Ahorro de la Energía

National Energy Agency of Spain
Agencia Española de la Energía

APPA

Spanish Renewable Energy Association
Asociación de Productores de Energías Renovables

European Commission
Comisión Europea

Organised by:
Organizado por:

EWEA

THE LARGEST EVER INTERNATIONAL WIND POWER EVENT

Rising energy demands, environmental concerns, security of energy supply, technological progress and employment are all issues where wind energy can provide solutions.

2003 EWEC is the largest ever international wind energy conference for the business and research community, with over 120 outstanding presentations from the top players in and beyond the wind power industry. 1500 people are expected to attend and over 150 companies are exhibiting. It is your opportunity to meet with experts and decision makers, experience all the latest products and services, listen to and debate the most important issues and benefit from unrivalled networking opportunities.

The conference in Spain is perfectly positioned to take advantage of one of the world's biggest markets. 2003 EWEC will provide you with a solid base for making informed decisions and developing future business strategies. Furthermore, it will arm you with the tools, information and contacts necessary to play a leading role in the wind power industry - the world's fastest growing energy technology.

EL MAYOR ACONTECIMIENTO EÓLICO INTERNACIONAL

La creciente demanda de energía, la problemática medioambiental, la seguridad de suministro, así como el progreso económico y tecnológico, son cuestiones fundamentales donde la energía eólica tiene soluciones que aportar.

La Conferencia Europea de Energía Eólica, 2003 EWEC, es el mayor acontecimiento internacional sobre energía eólica celebrado hasta la fecha. Dirigido al sector empresarial y de investigación, se espera que unas 1.500 personas acudan a esta cita y que más de 150 empresas expongan sus productos. Se trata de una oportunidad única para reunirse con especialistas y responsables políticos, conocer de primera mano los últimos productos y servicios, escuchar y debatir acerca de los temas más importantes que afectan al sector, y beneficiarse de unas posibilidades extraordinarias de establecer contactos estratégicos.

La Conferencia se celebrará en España y permitirá por ello aprender de la experiencia de uno de los principales mercados eólicos mundiales. 2003 EWEC le ofrece una base sólida sobre la que tomar las decisiones más adecuadas y elaborar estrategias de negocio.

WHY SHOULD I ATTEND ?

- **Gain** first hand knowledge and experience from industry leaders, politicians and the research community
- **Benefit** from unique and unrivaled networking opportunities
- **Obtain** insight in, and understanding of the key issues
- **Develop** strategies to obtain competitive advantage
- **See** the latest products and services

WHAT WILL I DISCOVER ?

- New market opportunities and corporate strategies
- Financial solutions and models
- Changing role of regulators in the liberalised market
- Latest technology and trends
- Policy and regulatory frameworks from across the EU and beyond
- Successful projects, case studies and strategies

¿POR QUÉ PARTICIPAR EN 2003 EWEC ?

- **Adquirir** nuevos conocimientos y conocer de primera mano a las empresas líderes del sector, a los responsables políticos y a la comunidad científica.
- **Beneficiarse** de una oportunidad extraordinaria para crear contactos estratégicos.
- **Lograr** una mejor visión y comprensión de los aspectos clave del sector.
- **Elaborar** estrategias que le permitan conseguir una mayor ventaja competitiva.
- **Conocer** los últimos productos y servicios.

¿QUÉ ENCONTRARÉ EN 2003 EWEC?

- Nuevas oportunidades de mercado y estrategias empresariales.
- Modelos y soluciones financieras.
- El nuevo papel de los reguladores en un mercado liberalizado.
- Las últimas tecnologías y tendencias del sector.
- Los enfoques políticos y legislativos de la Unión Europea y de otros países.
- Proyectos, casos prácticos y estrategias de éxito.

"After more than a decade of double-digit growth, renewable energy is a multibillion -dollar global business. Wind power is leading the way in many nations."

Worldwatch Institute 2003

"Después de más de una década de fuerte crecimiento, las energías renovables se han convertido en un negocio multimillonario. La energía eólica va a la cabeza enmuchos países"

Worldwatch Institute 2003

"Wind power and biomass will grow most rapidly, especially in OECD countries."

World Energy Outlook 2002 IEA

"La energía eólica y la biomasa serán las fuentes de más rápido crecimiento, especialmente en los países de la OCDE"

World Energy Outlook 2002 IEA

WHO SHOULD ATTEND ?

- Electricity generators, customers and suppliers
- Utilities, energy companies
- Investors and financiers
- Contractors
- Equipment manufacturers and component suppliers
- Project developers and contractors
- Legal, financial and professional service providers
- Regulators and Government policy makers
- Researchers and academics
- Engineers and technical experts
- Energy, climate and environment specialists, carbon traders
- Corporate sustainability interests
- Trade associations

¿QUIÉN DEBE PARTICIPAR EN 2003 EWEC ?

- Generadores de electricidad, consumidores y suministradores.
- Compañías eléctricas y energéticas.
- Inversores y entidades financieras.
- Fabricantes de equipos y suministradores de componentes.
- Promotores y contratistas.
- Proveedores de servicios legales, financieros y profesionales.
- Responsables políticos y legisladores.
- Investigadores y académicos.
- Ingenieros y expertos técnicos
- Especialistas en energía, clima, medio ambiente y comercio de emisiones.
- Interesados en la sostenibilidad corporativa.
- Grupos de apoyo al desarrollo sostenible.
- Asociaciones empresariales.

VENUE:

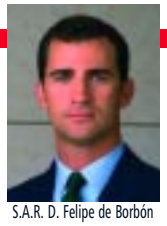
The Juan Carlos I Exhibition and Conference centre is one of the most modern and best equipped in Europe.
It is located in Campo de las Naciones, to the north of the city, 3 km from the airport. Participants at 2003 EWEC will benefit from the high quality and spacious meeting facilitites and on site business centre.

LUGAR DE CELEBRACIÓN :

El Palacio de Exposiciones y Congresos Juan Carlos I es uno de los más modernos y mejor equipados de Europa. Está ubicado en el Campo de las Naciones, al norte de la ciudad y a 3 km. del aeropuerto internacional de Barajas. Los participantes en 2003 EWEC se podrán beneficiar de la alta calidad y amplitud de estas instalaciones y del centro de negocios.

Conference Programme • Programa de la Conferencia

Monday 16th June • Lunes 16 de junio


S.A.R. D. Felipe de Borbón

Honorary President: H.R.H. Felipe de Borbón, Prince of Asturias, Spain
Presidente de Honor: S.A.R. D. Felipe de Borbón, Príncipe de Asturias, España

10:00 -12:00

AP1 • Opening Session • Sesión de Apertura


Eddie O'Connor


Patrick Cox


Loyola de Palacio

Chair / Presidente: Eddie O'Connor Vice President, EWEA, Belgium / Managing Director, airtricity, Ireland Vicepresidente, EWEA, Bélgica/ Director General, airtricity, Irlanda

- **Excmo. Sr. D. Patrick Cox,** President, European Parliament / Presidente, Parlamento Europeo
- **Excma. Sra. Dña. Loyola de Palacio,** Vice President of European Commission and Commissioner for Energy and Transport / Vicepresidenta de la Comisión Europea, Responsable de las Relaciones con el Parlamento y Comisaria de Transporte y Energía
- **Excmo. Sr. D. Rodrigo Rato,** Vice President of Spanish Government and Minister of Economy, Spain * / Vicepresidente Segundo del Gobierno español y Ministro de Economía, España *
- **Ilma. Sra. Dña. Isabel Monreal,** Director General, IDAE, Spain / Directora General, IDAE, España
- **Enrique Albiol,** President, Wind Section, APPA, Spain / Presidente, Sección Energía Eólica, APPA, España
- **Arthouros Zervos,** President, EWEA, Belgium / Presidente, EWEA, Bélgica

Key Note Speech / Discurso introductorio:
Corin Millais, CEO, EWEA, Belgium / Consejero Delegado, EWEA, Bélgica


Isabel Monreal


Enrique Albiol


Arthouros Zervos


Corin Millais

15:00 -16:30

AP2 • Key Industry Drivers • Líneas Maestras de la Industria

Chair/Presidentes: Excma. Sra. Dña. Mechtild Rothe, MEP, European Parliament / Miembro del Parlamento Europeo
Arthouros Zervos, President, EWEA, Belgium / Presidente, EWEA, Bélgica

- **Security of Energy Supply**
  Gunther Hanreich, DG TREN, European Commission
- **Deregulation and liberalisation**
  Douglas McIldoon, Ofreg, N. Ireland
- **Technology Trends**
  Jos Beurskens, ECN, The Netherlands
- **Climate Change**
  Speaker To Be Confirmed *

17:00 -18:30

AP3 • Growth and Grids: Panel Discussion • Crecimiento y Redes: Mesa redonda

Moderator / Moderador: Joaquín Fernández, Presenter, Spanish National Radio, Spain
Presentador de Radio Nacional de España, España

10 minute presentations followed by discussion / presentaciones de 10 minutos seguidas de debate:

- **Ilma. Sra. Dña. Carmen Becerril,** General Director, Energy and Mining Policy, Ministry of Economy, Spain
  Directora General de Política Energética y Minas, Ministerio de Economía, España
- **André Merlin,** Director, Electricity Distribution Network, France / Director, Electricity Distribution Network, Francia
- **Jim Caldwell,** Policy Director, AWEA, USA / Director de Política, AWEA, USA
- **Andrew Garrad,** Garrad Hassan, UK / Reino Unido
- **Martin Hoppe Kilpper,** ISET, Germany / Alemania
- **Klaus Rave,** Investitionsbank, Germany / Alemania

* to be confirmed • pendiente de confirmación

Business Sessions • Aspectos Económicos

BB1 • Finance • Financiación

9:30
-11:00

Chairs: Enrique Albiol, President, APPA wind section, Spain
Klaus Rave, Investitionsbank SH, Germany / Vice President, EWEA

- **Torsten Hinsche,** Commerzbank, Germany
- **Mergers, acquisitions and consolidation in the wind industry**
  Carl Tishler, Windpower Monthly / Babcock & Brown, UK
- **Assessment of major investment opportunities for wind electricity in Europe.**
  Miguel Gual, Universidad Pablo de Olavide, Pablo del Río, Universidad de Castilla-La Mancha, Spain
- **Technical due diligence for financing large wind farm projects**
  Andrew Garrad, Garrad Hassan and Partners, Lucy Craig, Garrad Hassan Representación en España, England
- **Third Party Financing of Wind Projects**
  Miguel Manrique de Lara y Ochoa, IDAE, Spain

BB2 • EU and national policies • Políticas Nacionales y Europeas

11:45
-13:30

Chairs: Isabel Monreal, Director General, IDAE, Spain
Karl Kellner, Head of Unit, DG TREN, European Commission

- **Renewables Directive update**
  Mechtild Rothe, MEP, European Parliament
- **EU policy overview**
  Christian Kjaer, Policy Director, EWEA, Belgium
- **US policy overview**
  Jaime Steve, Legislative Director, AWEA, USA
- **Wind energy development in Spain**
  Cayetano Hernández, Operations Manager, IDAE, Spain
- **German update**
  Thorsten Herdan, VDMA, Germany
- **The slow take-off of wind energy development in France: explanation and predictions for the future**
  André ANTOLINI, Antoine SAGLIO, Syndicat des Energies Renouvelables, France

BB4 • Liberalised electricity markets: Panel discussion • Mercados eléctricos liberalizados: mesa redonda

17:00
-18:30

Moderators: José Folgado, Secretary of State for Energy, Industrial Development and Small Businesses, Spain *
Soren Krohn, Managing Director, Danish Wind Industry Association, Denmark

Claude Turmes, MEP, European Parliament, Belgium

Pedro Meroño, President, National Energy Commission, Spain

Paul Bulteel, Secretary General, EURELECTRIC, Belgium

Hans-Mart Groen, Managing Director, Nuon – Renewable Energy Projects, The Netherlands

Poul Erik Morthorst, Risoe, Denmark

Marcel Krämer, Bremer Energie Institut, Germany

Technical Sessions

BT1.1 - Wind forecasting + short term prediction

9:30
-11:00

Chairs: Jean Michel Germa, Cabinet Germa, France
Bengt Tammelin, Finnish Wind Power Association, Finland

- **State-of-the-Art on Methods and Software Tools for Short-Term Prediction of Wind Energy Production.**
  G. Kariniotakis, Ecole des Mines de Paris, France; **G. Giebel, L. Landberg,** Risoe National Laboratory Denmark; **J. Halliday,** R. Brownsword Rutherford Appleton Laboratory, UK; **H.Madsen, T. S. Nielsen,** Danish Technical University, Denmark; **U. Focken, M. Lange,** University of Oldenburg, Germany; **I.Marti Perez,** CIEMAT, Spain.; J. Usaola, Carlos III University of Madrid, Spain.
- **Prediction and Planning of Wind Energy Production**
  Teresa Lozano, Eloy Piernagorda, Iberdrola Ingeníeria y Consultoría, Spain
- **Criteria in short-term wind power prognosis**
  Claus Stefan Nielsen, Hans F. Ravn, Elkraft System, Denmark

Tuesday 17th June • Martes 17 de junio

- **Online-monitoring and prediction of wind power in German transmission system operation centres**
  B. Ernst, K. Rohrig, F. Schlögl, Institut für Solare Energieversorgungstechnik e. V., Germany
- **On-line Assessment of Prediction Risk for Wind Power Production Forecasts**
  P. Pinson, G. Kariniotakis, Ecole des Mines de Paris, France

BT1.2 - Loads and safety

9:30 -11:00

Chairs: **David Quarton,** Garrad Hassan, UK
Herman Snel, ECN, The Netherlands

- **Design methods for Offshore Wind Turbines at Exposed Sites**
  T. R. Camp, Garrad Hassan & Partners Ltd, United Kingdom; **W. Grainger,** Amec Wind Ltd, United Kingdom; **R. P. J. O. M. van Rooij,** Delft University of Technology, Netherlands; **K. Argyriadis & S. Schwartz,** Germanischer Lloyd WindEnergie GmbH, Germany; **P. H. Lauritsen,** Vestas Wind Systems A/S, Denmark; **V. Weighill,** Powergen Renewables Development Ltd, United Kingdom
- **Calibration of Partial Safety Factors for Extreme Loads on Wind Turbines**
  Niels Jacob Tarp-Johansen, Peter Hauge Madsen, Sten Frandsen, Risoe National Laboratory, Denmark
- **Load analysis and certification of offshore wind turbines**
  Kimon Argyriadis, Silke Schwartz, Germanischer Lloyd WindEnergie GmbH, Germany
- **Influence of wave modelling on the prediction of fatigue and extreme loads for offshore wind turbines**
  D. Veldkamp, NEG Micon, Holland / Delft University Wind Energy Research Institute, Netherlands
  T. R. Camp, Garrad Hassan and Partners Ltd, United Kingdom
- **Dynamic analysis of an integrated drive train in a wind turbine**
  Joris Peeters, Dirk Vandepitte, Paul Sas, Katholieke Universiteit Leuven, Belgium; **Warren Smook,** Hansen Transmissions International, Belgium

BT2.1 - Grid integration

11:45 -13:30

Chairs: **Jürgen Schmid,** ISET, Germany
Luisa Huidobro, President & CEO, OMEL (Electricity market operator) Spain *

- **Solving interconnection problems at Pacificorp's Foote Creek Wind Farm**
  Bud Kehlri, Werner Zoske, American Superconductor, USA
- **Smoothing effects of distributed wind turbines Part.1: Coherence and smoothing effects in a wind farm**
  Toshiya NANAHARA, Masahiro ASARI, Central Research Institute of Electric power industry (CRIEPI); **Takamitsu SATO, Koji YAMAGUCHI,** Japan Weather Association (JWA); **Masaaki SHIBATA,** Mitsubishi Heavy Industries, Ltd; **Tsutomu MAEJIMA**, Denryoku Computing Center, Ltd, Japan
- **Grid impact of different technologies of wind turbine generator systems (WTGS)**
  Régine Belhomme, Awa-marie Ndiaye, Philipe Juston, Pierre Bousseau, Eric Gautier, EDF R&D, Département TESE, France
- **The wind farm main controller and the remote control system in the Horns Reef offshore wind farm**
  Peter Christiansen, Jesper R. Kristoffersen, Tech-wise A/S, Denmark
- **Cost efficient grid integration of large wind farms**
  John Olav Tande, Kjetil Uhlen, SINTEF Energy Research, Norway
- **Power quality measurements on different types of wind turbines operating in the same wind farm**
  D. Foussekis, F. Kokkalidis, S. Tentzerakis, D. Agoris, Centre for Renewable Energy Sources (CRES), Wind Energy Department, Greece

BT2.2 - Aerodynamics and aeroacustics

11:45 -13:30

Chairs: **Flemming Rasmussen,** *RISOE National Laboratory,* Denmark
Panayotis Chaviaropoulos, *Centre of Renewable Energy Sources (CRES),* Greece

- **Aeroelastic Simulation of a Wind Turbine Airfoil by Coupling CFD and a Beam Element Model**
  F.BERTAGNOLIO, N. SØRENSEN, M. HANSEN, M. GAUNAA, Risoe National Laboratory, Denmark
- **Status of the Risoe Wind Turbine Airfoils**
  Peter Fuglsang, Christian Bak, Risoe National Laboratory, Denmark
- **KNOWBLADE Task 1 "Improving power curve predictions" - first results**
  M.O.L.Hansen*, J.A.Michelsen, N.N.Sørensen, J.Johansen, S.Voutsinas, V.Papakonstantinou, S.Conway, S.Kang, J.EkatarinarisT, Technical University of Denmark, Denmark
- **Aerodynamic Structures and Processes in Rotationally Augmented Flow Fields**
  Scott J. Schreck, Michael C. Robinson, NREL's National Wind Technology Center, USA
- **Recommendations for Spacing in Wind Farms**
  Henry Seifert, Deutsches Windenergie-Institut GmbH, Germany
  Jürgen Kröning, TÜV-Nord Gruppe, Germany
- **Aeroelastic Stability Analysis of Wind Turbines using an Eigenvalue Approach**
  M. H. HANSEN, Risoe National Laboratory, Denmark

17:00 -18:30

BT4.1 - Electrical design and control

Chairs: **Jamie Chapman,** OEM Development Corporation, USA
Nicholas Jenkins, UMIST, UK

- **Vensys 62 – The next generation of gearless wind turbines goes into production**
  Friedrich Klinger, Stefan Balzert, Forschungsgruppe Windenergie, Germany
- **Advanced wind farm control according to transmission systems requirements**
  A. de Broe, Ecotècnia sccl, Spain; **K. Burges,** ECOFYS GMBH, Germany; **A. E. Feijóo Lorenzo,** Universidade de Vigo, Spain
- **Dynamic interaction of wind turbine dynamics and gearbox dynamics**
  Torben Juul Larsen , Kenneth Thomsen, Flemming Rasmussen, Risoe National Laboratory, Denmark
- **Ecotècnia 48/750 Variable-Speed Wind Turbine**
  Alex De Broe , Marc Guadayol , Pep Prats , Jordi Roca , Ola Carlson , Ecotècnia s.c.c.l. Spain
- **Grid Impacts of Wind Power: A Summary of Recent Studies in the United States**
  Brian Parsons, National Renewable Energy Laboratory; **Jim Caldwell,** American Wind Energy Association; **Brendan Kirby,** Oak Ridge National Laboratory; **Michael Milligan,** National Renewable Energy Laboratory; **Edgar Demeo,** Renewable Energy Consulting Services, USA

17:00 -18:30

BT4.2 - Development of Measurement Methods

Chairs: **Félix Avia,** CIEMAT, Spain
Jens P. Molly, DEWI, Germany *

- **Wind Energy SODAR Evaluation (WISE): Phase 1**
  Frank Ormel, ECN, Netherlands; Ioannis Antoniou, **Hans Jørgensen,** RISOE, Denmark; **Harald Mellinghoff,** DEWI, Germany; **Detlef Kindler,** WindTest KwK, Germany; **Fragiskos Mouzakis,** CRES, Greece ; **Stefan Emeis,** IMK-IFU, Germany; **Enrique Soria,** Ciemat, Spain
- **Wind tunnel experiments on a small rotating turbine for Measurements of Boundary Layer Effects due to Large-Scale Offshore Wind Farms**
  P.J. Eecen, T. Hegberg, J.M.H.M. van Veen, A.J. Brand, Energy research Centre of the Netherlands, Netherlands
- **A practical guide for quantifying uncertainty in load measurements for turbine type certification**
  Kostas Papadopoulos, Centre for Renewable Energy Sources (CRES), Greece; **Axel Andreä, Kimon Argyriadis,** Germanischer Lloyd WindEnergie GmbH, Germany
- **Needs and requirements for ice detection in wind energy**
  Laakso T, Peltola E, VTT Processes, Technical Research Centre of Finland, Finland
- **Structural strength and fatigue performance of large hybrid rotor blades**
  Roger Scherer, NOI Immobilen GmbH, Germany

Workshops and Poster Session

15:00 -16:30

Poster Session

Over 300 technical and business posters are to be displayed in the entrance to the main conference room. All authors are expected to attend this poster session in order to present and discuss the content of their poster.

15:00 -16:30

BW3.1: Operation + maintenance

Chairs: **Manuel Bustos,** APPA, Spain - **Pablo Eugui,** EHN, Spain

15:00 -16:30

BW3.2: Short term prediction

Chairs: **Luis Fernando Fente Álvarez,** Gamesa, Spain
Lars Landberg, Risoe, Denmark

15:00 -16:30

BW3.3: Policy + support mechanisms

Chairs: **José Donoso,** Gamesa, Spain
Roberto Gambi, DG TREN, European Commission
Christian Kjaer, EWEA

15:00 -16:30

BW3.4: Control + grids

Chairs: **Ervin Bossanyi,** Garrad Hassan, UK
Siegfried Heier, Universität Gh-Kassel
John Tande, SINTEF Energy Research, Norway

17:00 -18:30

BW4.1: Insurance + risk reduction

Chairs: **Helmut Klug,** DEWI, Germany
Fraser McLachlan, WindPro, UK

17:00 -18:30

BW4.2: Aerodynamics & aeroelasticity

Chairs: **Panayotis Chaviaropoulos,** Centre of Renewable Energy Sources (CRES), Greece
Hermann Snel, ECN, The Netherlands

Wednesday 18th June • Miércoles 18 de junio

Business Sessions • Aspéctos Económicos

CB1 • Offshore Developments • Desarrollos offshore

9:30 -11:00

Chairs: **Juan Antonio Alonso,** Promotion Manager, IDAE, Spain
Andrew Garrad, Garrad Hassan, UK

- **Financing of offshore wind projects - The good, the bad and the ugly**
  Jörg Böttcher, LB Kiel, Corporates / Energy Group, Germany
- **The Horns Rev 160 MW offshore project in operation**
  Niels M. Jensen, Tech-wise, Denmark
- **165 MW Nysted offshore wind farm in operation June 2003**
  Per Voelund, SEAS Wind Energy Centre, **Lars Woller,** Energi E2, Denmark
- **The Near Shore Wind park in the Netherlands**
  Jaap Olthoff, Nuon REP, Huub P.G.M. den Rooijen, Shell WindEnergy, Netherlands
- **A tendering procedure for developing offshore wind farms in Danish waters**
  Jørgen Lemming, Steffen Nielsen, The Danish Energy Authority, **Poul Erik Morthorst,** Risoe National Laboratory, Dienmark

CB2 • Market perspectives and constraints • Perspectivas de mercado y restricciones

11:45 -13:30

Chairs: **André Antolini,** President, SER, France / Vice President, EWEA
Pablo Eugui, EHN, Spain

- **Attractiveness of individual EU countries for wind projects**
  Johnathan Johns, Ernst and Young, UK
- **WINDWARD 2003 – radar on top European wind energy markets**
  Adrien Schmid-Kieninger, eclareon Madrid, Spain
- **International development in main wind energy markets**
  Javier Perea, Commercial Director, Gamesa Eólica, Spain
- **Offshore Prospects & Forecast CAPEX 2002-2007**
  Will Rowley, Adam Westwood; Douglas-Westwood Limited, United Kingdom
- **Large scale offshore wind energy in the North Sea a technology and policy perspective**
  H.J.T. Kooijman, H.J.M. Beurskens, H. Braam, A.J. Brand, B.H. Bulder; P.J. Eecen, H.B. Hendriks, T.J. de Lange, S.A. Herman, M. de Noord, J.T.G. Pierik, L.W.M.M. Rademakers, E.J.W. van Sambeek, M.A. Uyterlinde, Energy research Centre of the Netherlands (ECN), Netherlands
- **Offshore Wind Energy Potential outside the European Union**
  S. Siegfriedsen, A. Prehn, aerodyn Engineering GmbH, Germany

CB4 • New commercial wind turbines • Nuevos aerogeneradores industriales

17:00 -18:30

Chairs: **José Ignacio Llorente,** Engineering Director, Gamesa, Spain
Ian Mays, Managing Director, RES Ltd, UK / Vice President, EWEA

- **4.5MW Turbine**
  Aloys Wobben, Enercon, Germany
- **3.6MW Turbine**
  Andreas Reuter, Vice President Global Engineering, GE Wind Energy, Germany
- **A new generation of wind turbines, technological innovations and prototype description**
  Henning Bay Enevoldsen, Product manager, Vestas GSM, Denmark
- **ECOTECNIA 74, MW class wind turbine**
  Pep Prats, Ecotècnia s.c.c.l, Spain
- **Power Control of NEG Micon Wind Turbines**
  Chris Spruce, NEG Micon R&D, United Kingdom





Technical Sessions

CT1 - Wind resources

9:30
-11:30

Chairs: **Erik Lundtang Petersen,** RISOE National Laboratory, Denmark
Antonio Crespo Martínez, Universidad Politécnica de Madrid (UPM), Spain

- **The potential of wind energy worldwide: a grid cell approach**
  Monique Hoogwijk, Utrecht University, The Netherlands; **Jan Coelingh,** Ecofys bv, The Netherlands; **Bert de Vries,** RIVM, The National Institute of Public Health and the Environment, The Netherlands
- **The new US wind resource atlas**
  Michael Brower, Bruce Bailey, John Zack, TrueWind Solutions, LLC, USA
- **Offshore wind resource assessment based on satellite wind field maps**
  C. B. Hasager, O. Rathmann, M. Nielsen, R. Barthelmie, Risoe National Laboratory, Denmark
  B.R. Furevik, Nansens Environmental and Remote Sensing Center, Norway
- **Developments in Numerical Wind Atlas Methodologies: Capturing Diurnal and Seasonal Cycles**
  Jake Badger, Bo Hoffmann Jørgensen, Lars Landberg, Risoe National Laboratory, Denmark
- **A neural network based method for estimating wind speed and direction in mountainous area.**
  Francesco Castellani, Nicola Faina, Massimiliano Malerba, Giordano Franceschini, University of Perugia, Italy

CT2 - Design wind conditions

11:45
-13:30

Chairs: **Lars Landberg,** RISOE National Laboratory, Denmark
Rick Watson, University College Dublin, Ireland

- **Recent Developments in Turbine Site-Suitability Assessment**
  T. R. Camp, D. V. Witcher, Garrad Hassan & Partners Ltd, United Kingdom
- **Forensic analysis of SCADA data to understand the performance of operational wind farms**
  Keir Harman, Andrew Garrad, Garrad Hassan and Partners, United Kingdom
- **The effect of gusts with extreme rise time on the extreme loads of wind turbines**
  Wim Bierbooms, Delft University of Technology, Netherlands
- **Wind Modeling in Mountains: Intercomparison and Validation of Models**
  Beat Schaffner, METEOTEST, Switzerland; **Arne Reidar Gravdahl.** VECTOR AS, Norway
- **An explicit algebraic turbulent model to reproduce the anisotropy of the momentum turbulent flows in a wind turbine wake**
  Rafael Gómez-Elvira, Comisión Nacional de Energía, Spain; **Antonio Crespo,** Universidad Politécnica de Madrid, ETSII, Spain
- **Wind power forecasts in Sotavento**
  I.Martí, J. Sanz, Spanish National Centre for Renewable Energies (CENER); **A. Hermida**, SOTAVENTO Galicia S.A., Spain

CT4 - Autonomous systems, hybrid & desalination

17:00
-18:30

Chairs: **Per Lundsager,** RISOE National Laboratory, Denmark
Frans Van Hulle, 3E, Belgium

- **Rural electrification in Spain and in Mediterranean area.**
  Aurélie FABRE & Valérie BLECUA, Vergnet, France
- **RESEARCH AND DEVELOPMENT ON WIND ENERGY AUTONOMOUS SYSTEMS IN CIEMAT: A FOLLOW-UP**
  F.Avia, L.Arribas, C.García-Barquero, I.Cruz, CIEMAT, Spain
- **Wind-Diesel Models for Power Quality and Control Assessment**
  Alexandre Pereira, Brazilian Wind Energy Centre - CBEE, Universidade Federal de Pernambuco, CTG, Brazil
- **New developments in wind desalination and autonomous systems**
  Aloys Wobben, Enercon, Germany
- **Operational Constraints and Economic Benefits of Wind-Hydro Hybrid Systems – Analysis of Systems in the U.S./Canada and Russia**
  Daniel F. Ancona, Princeton Energy Resources International, USA; **Stéphane Krau,** IREQ, Hydro-Québec, Canada; **Gaétan Lafrance,** INRS, University of Québec, Canada

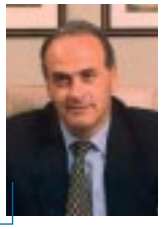
Wednesday 18th June • Miércoles 18 de junio

Industry Vision

CF1 - CEO Vision

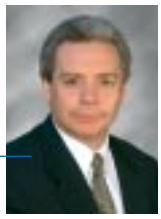
9:30
-11:30

Chair: Corin Millais, CEO, EWEA



- **Aloys Wobben,** Enercon, Germany
  Wind Power: Prospects and Visions

- **Esteban Morrás Andrés,**EHN, Spain
  The earth, the wind and the economy



- **Iñaki López Gandasegui**, Gamesa, Spain
  Growing with the wind

- **Steve Zwolinski,** GE Wind Energy, USA
  Wind power: A GE perspective

- **Anders Christensen,** LM Glasfiber, Denmark
  Why specialisation is the route to competitiveness

- **Torben Bjerre-Madsen,** NEG Micon, Denmark
  Globalisation of wind power

- **David Jones,** Shell WindEnergy
  Will wind become the energy for tomorrow's generation?

- **Ian Mays,** RES, UK
  Realizing the Potential of Wind Energy

- **Svend Sigaard,** Vestas, Denmark
  Wind's perspectives

CF2 - Industry vision: Panel discussion:

11:45
-13:30

Introduction: Enrique Leyva, McKinsey, Spain

Panelists will include participants from CEO vision session above

CF3 – Thematic network: Wind energy R&D strategy

15:00
-16:30

Chairs: **Jochen Twele,** BWE, Germany
Peter Hjuler Jensen, Risoe, Denmark

Speakers: **Jos Beurskens,** ECN, The Netherlands
Jan Declercq, Pauwels International, Belgium
Jürgen Greif, DG Research, European Commission
Komninos Diamantaras, DG Research, European Commission

The network provides the opportunity for the wind energy sector to contribute fully to the European Research Area, by allowing better coordination of EC and Member State wind energy RD&D, promoting a common industry view on RD&D needs, coordination of industry inputs to RD&D and policy discussions, bringing together information required to track and make decisions on RD&D issues and providing rapid access to this information for the Commission.

EWEA is responsible for coordinating a team including members of the different groups active in wind energy: NEG Micon (representing the turbine manufacturers), Pauwels (representing component manufacturers), the Investitionsbank Schleswig Holstein (representing financiers and insurers involved in wind energy), ECN and RISOE (representing R&D, Testing and certification Centres), and organisation representing end-users: BWE (representing Turbine Owners), RES (Representing Developers) and by Elsam (representing the utilities and end users other than developers and owners).

Wednesday 18th June • Miércoles 18 de junio

Workshops

CW3.1: Offshore: Technology trends

15:00 -16:30

Chairs: **Jim Richards,** GE Wind Energy, UK
Pamela Walsh, airtricity, Ireland

CW3.2: Wind resources

15:00 -16:30

Chairs: **Martin Hoppe Kilpper,** ISET, Germany
Niels G. Mortensen, Risoe, Denmark

CW3.3: Certification & standards

15:00 -16:30

Chairs: **Peter Hjuler Jensen,** Risoe, Denmark
Christian Nath, Germanischer Lloyd WindEnergie, Germany

CW3.4: Costs & prices of wind generated electricity

15:00 -16:30

Chairs: **Michael Durstewitz,** ISET, Germany
Poul Erik Morthorst, Risoe, Denmark

CW4.1: Project finance

17:00 -18:30

Chairs: **Andreas Haerdter,** HVB, Germany
Paul van Lieshout, PB Power, UK

CW4.2: Measurements

17:00 -18:30

Chairs: **Henry Seifert,** DEWI, Germany
P Vionis, CRES, Greece

CW4.3: Innovative designs

17:00 -18:30

Chairs: **Flemming Rasmussen,** Risoe, Denmark
Gijs Van Kuik, TU Delft, The Netherlands

Thursday 19th June • Jueves 19 de junio

Business Sessions • Aspectos Económicos

DB1 • Wind power in society • La energía eólica en la sociedad

9:30 -11:30

Chairs: **Noula Ahern,** MEP, European Parliament *
Manuel de Delás, Secretary General, APPA, Spain

- **How to implement 2,000 MW of wind power with social backing**
  José Arrieta, EHN, Spain
- **Management of social acceptance during project development**
  Juan Fraga, General Secretary, EUFORES - European Forum for Renewable Energy Sources / General Manager, NATURENER Eólica, Spain
- **Environmental issues for wind energy projects**
  Heikki Willstedt, WWF, Spain
- **Offshore related environmental issues. Public and political acceptance**
  Jette Kjær Gaarde, Techwise, Denmark
- **Virtual reality modelling of wind farms including the countryside**
  Morten Lybech Thøgersen, Per Nielsen, Energy and Environmental Data, Denmark

DB2 • Large scale wind penetration and storage • Penetración eólica a gran escala y almacenaje

11:45 -13:30

Chairs: **Antonio Carbonell,** Finantial and Administrative Manager, IDAE, Spain
Andreas Wagner, GE Wind Energy, Germany / Vice President, EWEA

- **The effect of increasing wind penetration on the electricity systems of the Republic of Ireland and Northern Ireland**
  Paul Gardner, Sean McGoldrick, Tony Higgins, Brian Ó Gallachóir, Garrad Hassan and Partners, ESB International Ltd, and University College Cork, Ireland
- **Survey of integration of 6000 MW offshore wind power in Netherlands electricity grid in 2020**
  J. L. 't Hooft, Novem, Netherlands
- **Sustainable evolution of a generating system under large penetration of wind capacity: The Case of Portugal**
  Joana Esteves, Pedro Cabral, Helena Azevedo, Generating System Planning Directorate, Portugal
- **Development of large scale wind farms in Tasmania, Australia**
  Simon Gamble, Marian Piekutowski, Hydro Tasmania, Australia
- **Use of Compressed Air Energy Storage (CAES) power plants to balance fluctuating wind power generation and power demands**
  Fritz Crotogino, Kavernenbau- und Betriebs GmbH, Germany
- **Estimating system reliability and production costs and with high wind power penetration: an application to the Italian power system**
  Pantaleo A., Trovato M, Dipartimento di Elettrotecnica ed Elettronica – Facoltà di Ingegneria, Politecnico di Bari Italy

Technical Sessions

DT1 - Large wind turbine design

9:30 -11:30

Chairs: **Antoni Martínez,** Managing Director, Ecotècnia, Spain / Vice President, EWEA
Christian Nath, Germanischer Lloyd WindEnergie, Germany

- **Development and Operational Experience of the WEC Winwind WWD-1**
  Georg Böhmeke, WINWIND OY, Finland
- **Optimum balance between innovation and reliability**
  José Ignacio Llorente, Gamesa Eólica S.A., Spain
- **Experimental results of the new Variable Speed Multipole Wind Turbine TWT1500**
  Eduardo Torres, M.Torres, Diseños Industriales, S.A., Spain
- **Experiences with two of the world's largest wind turbine towers**
  Marc Seidel, GE Wind Energy GmbH, Germany
- **Integrated testing and reliable design of large wind turbine blades**
  John Korsgaard, Head of Research Dept., LM Glasfiber, Denmark

DT2 - Innovative offshore design

11:45 -13:30

Chairs: **Egon V Poulsen,** Vestas, Denmark
Gijs Van Kuik, TU Delft, The Netherlands

- **Rules for offshore wind turbines**
  Peter Petersen, DNV Denmark A/S, Denmark

- **The development of offshore wind generation**
  Andrew Dinning, Mark Lawson, Philip Taylor, Econnect Ltd, UK
- **Philosophy and design of the new Offshore-WEC REpower 5M**
  Peter Quell, REpower Systems AG, Germany
- **Protecting & Connecting the Offshore Turbines**
  Cor-Jan Stam, Rene van Kessel, voacz, The Netherlands
- **Meeting the challenge of founding wind turbines in the Baltic Sea**
  Esa Eranti, Eranti Engineering Oy; **Esa Holttinen,** Electrowatt-Ekono Oy;
  Timo Jokinen, Mäntyluoto Works Oy; **Erkki Lahti,** YIT Construction Ltd, Finland
- **The design process for a large Offshore-WEC, lessons learned**
  M. Lehnhoff, S. Siegfriedsen, T. Witte, aerodyn Energiesysteme GmbH, Germany

Fora and Workshops

DF1: Kyoto mechanisms

9:30
-11:00

Chair: Gordon Edge, Editor, Platts Renewable Energy Report, UK

Participants:
- **Paula Azcul,** Ecosecurities
- **Niels Erik Clausen,** Risoe, Denmark
- **Mark Evans,** Hammonds, UK
- **Andrei Marcu,** International Emissions Trading Association

DF2: Wind power in developing countries

11:45
-13:30

Chair: Rakesh Bakshi, Chairman, RRB Consultants & Engineers Pvt Ltd., India

Participants:
- **Alan Miller,** Global Environment Facility
  Introduction to the GEF and its approaches
- **Dana Younger,** International Finance Corporation
  IFC perspective on emerging market wind investments
- **Andre Leal de Sa,** Ecoinvest Assessoria Ltda., Brazil
  Emission Credits and The Wind Energy Development in Brazil
- **Eng Hosni Elkholy,** Chairman, NREA, Egypt
  Wind energy programs & the state of wind power in Egypt

Followed by a discussion of priorities for GEF intervention. Audience comments are invited on the question: What types of policies, financing mechanisms, training, business development, or other interventions should the GEF support, as first priorities, to support wind power markets in developing countries?

DW1: Opportunities in Australia

9:30
-11:00

Chair: David Young, Sustainable Energy Authority, Australia

This workshop will bring together industry experts, government representatives, wind energy consultants and developers to discuss Australia's wind resource, regulatory frameworks and market environment for wind in Australia. The services that Australian companies and government bodies can offer to facilitate development and manufacturing in Australia will also be outlined.

This workshop will end with a panel discussion where all your questions about wind energy in Australia will be answered by Australian experts from a range of areas.

Closing Session • Sesión de Clausura

DP3 • Future perspectives • Perspectivas de futuro

15:00
-16:00

Chairs: Claude Turmes, MEP, European Parliament *
Fco. A. Javier Rodríguez-Mañas, General Secretary, IDAE, Spain

Brian Wilson MP, Energy Minister, UK

Herman Scheer, MP, Germany

Arthouros Zervos, President, EWEA, Belgium

Steve Sawyer, Greenpeace International

DP4 • Closing session • Sesión de clausura

16:00
End

Poster Awards: Peter Hjuler Jensen, RISOE National Laboratory, Denmark

Poul la Cour Prize: Nominations from Steering Committee

Conference Summary: Jos Beurskens, ECN, The Netherlands

Closing Speech: Eddie O'Connor, Vice President, EWEA, Belgium / Managing Director, airtricity, Ireland

Professional Course: "Developing offshore wind energy"

The course

Run in close collaboration with EWEA and supported by the European Commission, this course will give an in-depth technical training of the state of the art in offshore wind technology. It will describe the most recent innovations in the field and the latest available techniques. The topics to be addressed range across the full spectrum of technical considerations in the development of offshore plant, from gauging the size of the offshore wind resource, through the erection of the turbines, to the best way to maintain them and guarantee their continued operation. Experts from research institutes within the in EUREC Agency network members will provide an unbiased assessment of current best practice.

This course is intended to be highly interactive, with participants encouraged to challenge the experts. Before it begins, they may submit questions to the panel on topics they would like to see addressed. The number of participants will be kept low to create the conditions for a freer exchange of ideas.

Who should attend

The course is pitched at technical staff at management level with a grounding in of the major themes of offshore wind, but in need of a better grasp of the specifics.

We expect participants from a range of companies. Some may only now be waking up to the opportunities presented by offshore wind development. Other may be wanting to put the finishing touches to their plans. Representatives from utilities or marine contractors may form part of the group.

Practical information

To be added to our mailing list for updates on the course, or for any other information, please contact Greg Arrowsmith at EUREC Agency (+32 2 546 1930, arrowsmith@eurec.be).

The course will start late morning of Sunday 15 June and continues during the full day of Monday 16 June. It takes place at the 2003 EWEC venue, the Feria de Madrid, Parque Ferial Juan Carlos, Madrid, Spain.

The cost is: € 1250,-

As a joint activity of EUREC Agency and EWEA, this course is integrated in the 2003 European Wind Energy Conference.

Registrations should be made using the appropriate tick boxes on the 2003 EWEC registration form.

These prices include a full (four-day) pass to the main conference & exhibition.

More information available on the EUREC Agency web-site Follow the links from www.eurec.be

FINANCE

On the wind energy resource of Sudan
Abdeen Mustafa Omer, School of the Built Environment
University of Nottingham, UK

Project Finance: an alternative to traditional corporate lending
Rafael Cano Zaragoza, Santander Central Hispano Investment, Spain

The Necessity of Securitised Bonds to make Wind Energy Development happen
Marc J.M Buiting, PricewaterhouseCoopers, Netherlands

Implications of European renewable energy tariff regimes and the introduction of green/emission certificates for wind power financing
Andreas Haerdter, HVB Corporates & Markets, Germany
Dirk Engels, HVB Grou 0p
Verena Batschkus, HVB Group

How financiers evaluate the bankability of wind farm projects today and tomorrow
Andreas Haerdter, HVB Corporates & Markets, Germany
Dirk Engels, HVB Group
Verena Batschkus, HVB Group

Bulgaria as a New Target for Wind Power Generation in Europe
Bojidar Archinkov, Bulgarian Rating Agency AD, Bulgary

Continuity of the project of aeolian generation in Ramos Arizpe, Coahuila, Mexico
Anabel Negrete, Unidad de Estudios de Posgrado.
Universidad Nacional Autónoma de México, Mexico

Cashing in the Carbon Chip - Accessing Emissions Reduction Revenues for Wind Power Investments
Mike Bess, ESD Ltd., UK
Matthew Clayton, ESD
Chris Crookall Fallon, ESD
James Graham, ESD
Gareth Jones, ESD
Ash Sharma, ESD

Large Scale Development of Wind Energy in South Korea Installation of 160 MW Wind Parks
Bert Hagenkort, Lahmeyer International GmbH, Germany
Roland Ries, Department Renewable Energies
Lahmeyer International Site Office in Korea

The Relationship of O&M Costs, Design Life, Design Defects and Weibull Reliability Parameters
Robert Z. Poore, Global Energy Concepts, USA
Mark Young, Global Energy Concepts
Kevin Jackson, Dynamic Design

Financial risks related to the technology reliability
Cristóbal Lopez, Iberdrola Ingenieria y Consultoria, Spain

First Nations; Wind Energy & Economic Development
G.C. Chung, Makani o Ka'u Windpower Risk Management
& Risk Financing, USA

Wind Risk Management - Securing Improved Finance by Hedging with Wind Derivatives
Christopher Clancy, Entergy-Koch Trading Limited, United Kingdom
David Pethick, Entergy-Koch Trading Limited

A better Deal from Insurance?
Fraser McLachlan, Miller Insurance Services Limited, UK

Financing of wind power projects a challenge in developing country
K.S. Sridharan, Indian Renewable Energy Development
Agency Limited (IREDA, India

Uncertainty Analysis of Energy Yield Predictions as Basis for Risk Evaluation of Wind Farm Projects
Axel Albers, Deutsche WindGuard Consulting Gmbh, Germany

MARKET PERSPECTIVES & CONSTRAINTS & OFFSHORE DEVELOPMENTS

The PFAU-Project for wind power prediction and information managment using Previento and Grass
Stefa Bofinger, meteocontrol, Germany
Gerd Heilscher, meteocontrol

Methodological Guidelines for the Environmental and Socio Economic Impact Assessment of offshore windfarms in touristic areas. (ALTENER PROGRAMME)
Esther Villanueva Gaviña, IBERDROLA INGENIERÍA
Y CONSULTORÍA S.A., Spain
Alberto Rodríguez, IBERDROLA INGENIERÍA Y CONSULTORÍA S.A.
Manuel Vázquez, IBERDROLA INGENIERÍA Y CONSULTORÍA S.A.
Julio de Jesús, ECOSSISTEMA. CONSULTORES EM ENGENHARIA
DO AMBIENTE. LDA.
Joao José Martins, ECOSSISTEMA. CONSULTORES
EM ENGENHARIA DO AMBIENTE. LDA.

Building offshore in the Irish Sea
Pamela Walsh, airtricity, Ireland

Cost reduction prospects for the offshore wind energy sector
M. Junginger, Utrecht University, Netherlands
A. Faaij, Utrecht University

After Off-Shore
Thyge Weller, fair energy consulting, Germany

Parameters to be considered when establishing an offshore wind park based on les-sons learned by Vestas Wind Systems A/S from the Horns Reef 160MW project in the North Sea.
Egon V. Poulsen, Vestas Wind Systems A/S,, Denmark

Creative Marketing for Green Branded Electricity
María Garcia Argüelles, ENERGI E2 Renovables Ibericas, Spain

Southerly Wind Shift
Godfrey Chua, Emerging Energy Research, LLC, USA
William Ambrose, Emerging Energy Research, LLC

Prospects for Large Scale Offshore Wind Power Production in Gulf of Bothnia
Esa Holttinen, Electrowatt-Ekono Oy, Finland
Esa Eranti, Eranti Engineering Oy
Jouni Laitinen, Sigma Konsultit Oy
Antti Irjala, Ministry of Environment

A database of the vessels and equipment for the installation of Offshore Wind Farms
Peter Hodgetts, Garrad Hassan and Partners Limited, UK

Development of wind energy market in Poland.
Wojciech GLOCKO, EPA Spólka z o.o., Poland

How much sea wind can Belgium take on board?
Frans Van Hulle,, Yves Cabooter (3E nv), Belgium
Vera Van Lancker, (RCMG Ghent University),
Johan Driessen,, (KUL ESAT – ELECTA),

External maintenance of turbines using an elevator suspended platform
Cástor Casas Tojo, Servicios de Ingeniería y Montaje, Alén, S.L., Spain
Blanca Benedicto, Servicios de Ingeniería y Montaje, Alén, S.L.
Andreia Ramos, Servicios de Ingeniería y Montaje, Alén, S.L.

Samsø offshore wind farm. From idea to realization
Svend Richmann Jensen, SEAS Wind Energy Centre, Denmark
Claus Gormsen, NIRAS Consulting Engineers and Planners

Wind energy resources and priority projects in the former soviet union and Eastern Europe
Mehmet Hanagasioglu, Interwind AG, Switzerland
Ryan Pletka, Black & Veatch

Markets for Wind Power and Other Renewable Energy in the U.S
Michael Eckhart, American Council for Renewable Energy, USA

EU & NATIONAL POLICIES & WIND POWER IN SOCIETY

State versus private wind power investments in Greece. Long-term comparison on the basis of energy productivity
J.K. Kaldellis, Lab of Soft Energy Applications
& Environmental Protection
Mechanical Eng. Dept., TEI of Piraeus, Greece
D.S. Vlachou, Lab of Soft Energy Applications
& Environmental Protection
Mechanical Eng. Dept., TEI of Piraeus
A.G. Paliatsos, Lab of Soft Energy Applications
& Environmental Protection
Mechanical Eng. Dept., TEI of Piraeus

Cost-benefit analysis of energy storage systems used in wind energy applications
J.K. Kaldellis, Lab of Soft Energy Applications
& Environmental Protection
Mechanical Eng. Dept., TEI of Piraeus, Greece
K.A. Kavadias, Lab of Soft Energy Applications
& Environmental Protection
Mechanical Eng. Dept., TEI of Piraeus
E. Kondili, Lab of Soft Energy Applications
& Environmental Protection
Mechanical Eng. Dept., TEI of Piraeus

Wind energy: ecologic discussion
Antonio Lucena, GAIA, Ecologistas en Acción, Spain

A tool to encourage the wind power development in Ibero-América
José Cataldo, IMFIA Facultad de Ingeniería
Universidad de la Republica Montevideo, Uruguay
And 13 co-authors more,

Will the CDM Bring Chinese Wind Power Development into a New Era?
L. Zhu, University of Southampton, United Kingdom

Emerging practices of wind farm planning in a dense bird migration area
Niels-Erik Clausen, Risoe National Laboratory, Denmark
Niels G Mortensen, Risoe National Laboratory
Jens Carsten Hansen, Risoe National Laboratory
Flemming Pagh Jensen, Hedeselskabet Environment & Energy A/S
Laila Georgy, NREA

Landscape impact study
Elena Blanca, Dyta Energía y Medioambiente, Spain

Wind Energy Impacts on the Environment
Liliana Surugiu, J.-A. Bombardier Aeronautical Chair,
École Polytechnique de Montréal, Canada
Ion Paraschivoiu, J.-A. Bombardier Aeronautical Chair,
École Polytechnique de Montréal

The Design of Wind Energy Incentives for the Hydrogen Economy
Charles Donovan, Enviros Consulting, UK

Mediation in windpower implementation: a succesful policy instrument
Frans A. Van der Loo, Novem, Netherlands Agency for Energy
and the Environment, Netherlands

Wind park of "Es Milà": the paper of the administration like instrument for the construction of the first wind park in Menorca
Javier Tejero, Consorci per a la Gestió dels Residus
Sòlids Urbans de Menorca" Spain, USA

Legal issues facing the wind energy industry and how these impact on the management and operation of wind energy projects (both on and offshore) at all stages of the project lifecycle
Roger Seshan, Masons, UK

Social aspects of the wind energy utilisation in Hungary
Zoltán Baros, Univerity of Debrecen, Hungary
Csaba Patkós, University of Debrecen
Tamás Tóth, University of Debrecen

Need for an off-shore wind program in Spain
José Luis García, Greenpeace Spain, Spain
Emilio Rull, Greenpeace Spain
Juan Emilio Menéndez, Cooperator with Greenpeace Spain

Carbon trading and wind energy in India: Overview, constraints and opportunities
Chintan Shah, Suzlon Energy Limited, India

International Cooperation as an Instrument for Wind Energy Development: Accomplishments of the past 25 years and strategy for the future
J. Lemming, Danish Energy Authority, Denmark
P. Goldman, U.S. Department of Energy
S-E. Thor, FOI, Aeronautics
F. Avia, CIEMAT, Department of Renewable Energies

Experience and prospect of Type Certification according to IEC WT 01
Bente Vestergaard, Det Norske Veritas, Denmark

Towards an EU market for Renewable Electricity (RES-E). A critical analysis of National Policies
Miguel Ángel Gual, Instituto de Economía y Geografía (IEG-CSIC), Spain
Félix Hernández, Instituto de Economía y Geografía (IEG-CSIC)
Pablo Del Río, Facultad de Ciencias Jurídicas y Sociales
de ToledoUniversidad de Castilla-La Mancha

Promoting RES-E in Europe Feed-In Tariffs or Tradable Green Certificates: Which instrument is more effective?
Claus Huber, Energy Economics Group, Austria
Thomas Haas, Energy Economics Group

Thomas Faber, Energy Economics Group
Gustav Resch, Energy Economics Group
Hans Auer, Energy Economics Group

Enabling Offshore Wind Developments
Geert Palmers, 3E nv, Belgium
Suzanne Shaw, 3E nv

The wind energy boom in Asturias and the agreements as a need for sustainable resources exploitation
Manuel PENCHE, Fundación Asturiana de la Energía, Spain
JUAN CARLOS AGUILERA, Fundación Asturiana de la Energía
Carlos García, Fundación Asturiana de la Energía
Maria Jesús Rodríguez, Fundación Asturiana de la Energía
Indalecio González, Fundación Asturiana de la Energía

Design criteria for feed-in tariffs
Gustav Resch, Energy Economics Group,
Vienna University of Technology, Austria
Thomas Faber, Energy Economics Group,
Vienna University of Technology
Reinhard Haas, Energy Economics Group,
Vienna University of Technology
Claus Huber, Energy Economics Group,
Vienna University of Technology

Applying New Computer-Aided Tools for Wind Farm Planning and Environmental Impact Analysis
Morten Lybech Thøgersen, Energi- og miljødata, Denmark
Per Nielsen, Energi- og miljødata
Mads. V Sørensen, Energi- og miljødata
Per Toppenberg, Nordjyllands Amt
Erik Søe Christiansen, Nibe Kommune

Investing in French wind energy : legal and regulatory aspects"
Jean-Paul Demange, Partner at HSD Ernst & Young, France

How to communicate visual impact from very large-scale wind energy projects to the public and the decision makers
Einar Berg, Landscape architect. Manager
of consultancy Inter Pares as, Norway
Paal Anders Dahl, Chief engineer.
Nord-Troendelag Electricity Utilities

The German Research Platform in the North Sea
Petra Rakebrandt-Gräßner, Germanischer Lloyd
WindEnergie GmbH, Germany
Thomas Neumann, Deutsches Windenergie-Institut GmbH

Wind Energy Program in Libya
M Ekhlat, General Electrical Company of Libya (GECOL), Lybia
W El-Osta, Center for Solar Energy Studies (CSES)
O.M. Abdalla, General Electrical Company of Libya (GECOL

On-shore Wind Energy in the 21st Century - The On-going Challenge of Public Support and Target Delivery
Hugh CLEAR HILL, School of Health, Natural and Social Sciences
University of Sunderland, UK

Biodegradable lubricants in windpower-plants
Dirk Kempkes, Fuchs Lubritech GmbH, Germany

Load reduction on pitch controlled wind turbines using measurements of loads and accelerations.
E.A. Bossanyi, Garrad Hassan & Partners Ltd, UK

ROTORCARE.DE Holistic lifecycle approach to care for rotor blades
Wolfgang Holstein, HMS, Germany

Some consequences of the "free energy sources paradox" for the design of energy policies in favour of wind power
Bernard Chabot, ADEME, France

The Story of the Wind Farm of Tarifa, Spain
Tuuli Lehtinen, , Spain

Experience curves and energy policies assessment - A case study for wind
M Durstewitz, Institut für Solare Energieversorgungstechnik e. V.,
Information and Energy Economy, Germany
Per Dannemand Andersen, Risø National Laboratory
Lena Neij, Lund University, Environmental and Energy System Studies

ENERLIM Translational Wind Turbine.
Oscar Garay, Fundación LEIA C.D.T., Spain
Iñaki Garayo, ENERLIM ALBIA S.L.

Study of Wind credit Capacity
Aurea Bastos, REN – Rede Eléctrica Nacional, S.A., Portugal
Sonia Vilela, REN – Rede Eléctrica Nacional, S.A
Maria Natália Tavares, REN – Rede Eléctrica Nacional, S.A.

Generation and Selling of Carbon Credits:
Profit Maximisation from the Sellers Point of View
Thomas Stetter, Factor Consulting + Management AG, Switzerland
Lukas Heer, Factor Consulting + Management AG
Christoph Sutter, Factor Consulting + Management AG

La Flexibility of the renewable energies: The wind energy in city.
Mercedes Ortiz, Alicante University, Spain

Automated Health Monitoring of Wind Turbine Machinery
David Board, SWANTECH, LLC, USA

Leveraging public acceptance in wind farm design
through an innovative approach
E. Morganti, ENEL GreenPower SpA, Italy
D. Bercebal, ENEL GreenPower SpA

Lattice Towers - the best choice for environment, machines and money
Martin Holtgrewe, SeeBA Energiesysteme GmbH, Germany

Methodology for design, development, inspection and acceptance of Wind Farms
Cristóbal Lopez, Iberdrola Ingenieria y Consultoria, Spain

Cumulative Impact Assessment - Current Issues in Implementation
Janet Swan, RSK Environment Ltd, UK
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Environmental Impact Assessment, Life Cycle Assessment and Environmental Planning
From Theory to Practice. Nysted Offshore Wind Farm, Denmark
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Development and first results of a bird impact detection system for wind turbines
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Offshore Safety Training: an integrated part of a successful business strategy
HG Knoop, GAUSS mbH, Institute for Environmental
Protection and Safety in Shipping, Germany
Inga Fokuhl, GAUSS mbH, Institute for Environmental
Protection and Safety in Shipping

How much does the Wind Rights Worth?
Marco Borja, Instituto de Investigaciones Electricas, Mexico
Oscar Jaramillo, Instituto de Investigaciones Electricas

Media and stakeholder management in the development of wind farm projects
Sue Sljivic, RSK Environment Ltd, UK

Effect on migrating birds at the Utgrunden and Yttre Stengrund Offshore Wind Farms in Sweden
Thomas Stalin, GE Wind Energy, Sweden
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Brazilian wind energy programme : first phase 1,100 mw - Technical, economical and legislation considerations
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Offshore Oil and Gas and Deepwater Development
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SANKO© Integrated Safety-, Health-, and Contingency-Management for Offshore-Wind Farms
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and Safety in Shipping, Germany
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The "proinfa" regulation in Brazil : an unprecedented instrument for wind industry expansion in Latin América
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and the Caribbean (ECLAC),
UNITED NATIONS, Chile

Environmental impact and assessment of wind farms in India
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What should to be done in russian power sector and legislation for real beginning of the wind power development
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Service and Maintenance of Offshore Wind Farms
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Lifetime of Wind Turbines in Denmark
Poul Erik Morthorst, Risø National Laboratory, Denmark
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A global experience curve for wind energy
M. Junginger, Utrecht University, Netherlands
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Energy balance of a modern offshore wind farm
Henriette Hassing, Tech-wise, Denmark
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Green certificates - a market oriented way of subsidising green production technologies
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WINDENG - a new network in Europe
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Factors affecting public acceptance wind turbines in Sweden
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Emerging markets for wind energy projects a view on Chile, South Africa and China
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Portuguese Wind Energy GIS Database
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e Tecnologia Industrial., Portugal
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Technology Watch: Applications within the Wind Energy Market
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Green certificates - a possibile support scheme for renewable energy use in Croatia
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Tea Kovacevic, Department of Power Systems,
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The more, the merrier! An economic analysis of the Spanish wind energy cluster
Enrique Loredo, Universidad de Oviedo, Spain

Prediction of Wind Conditions in Complex Terrain at High Altitudes in Madeira Island: Meso- and Small-scale Modeling
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A. Rodrigues, Faculty of Engineering
J. Ferreira, Meteorology Institute
M. Valente, Physics Department and Geophysics Centre
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The Wind Power Development in Sweden How do public policy instruments effect market development?
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and Energy Systems Studies, Lund University, Sweden

Dynamic Art at Wind Turbines
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Knud Rehfeldt, Deutsche WindGuard GmbH
Gerd Gerdes, Deutsche WindGuard GmbH
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LIBERALISED ELECTRICITY MARKETS

Direct use of wind energy by large consumers : an innovative model
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Jean Lemaire,

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Dynamic performance indicator an effective tool to promote Wind Electricity
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Herbert Müller, Department of Energy Ergonomics of the Technical University in Vienna

Factors affecting wind energy development in Mediterranean Countries
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H. Cabal, CIEMAT. Socioeconomic Studies of Energy and Environment
R. Sáez, CIEMAT. Socioeconomic Studies of Energy and Environment

Unavoidable symbiosis between cogeneration plants and wind farms
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David Toke, University of Birmingham

Participation of wind energy in electricity markets with a short term wind power prediction tool.
Julio Usaola, Universidad de Carlos III de Madrid, Spain
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Meeting the Electricity Needs of an Irish Local Authority With Wind Power
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Brian Ó Gallachóir, University College Cork
Eamon McKeogh, University College Cork

NEW COMERCIAL WIND TURBINES & LARGE SCALE WIND PENETRATION AND STORAGE

Power System Dynamic Performance Improvements from Advanced Reactive Power Control of Wind Turbine-Generators
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"giromil" - ENERLIM wind turbine
Oscar Garay, Fundación LEIA C.D.T., Spain
Iñaki Garayo, ENERLIM ALBIA S.L.

Multi megawatt technology: Present and future
Antonio Casla, GE Wind Energy Spain and Portugal, Spain
Ignacio Martin, GE Wind España y Portugal
Pedro Alonso, GE Wind España y Portugal

Methods and contractual instruments to manage construction risk allocation in offshore wind farms
Roger Seshan, Masons, UK

Increasing the energy output of onshore wind farms by applying larger and higher wind turbines.
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Assessment of the wind characteristics in Santa Catarina-Brazil in view of the integration of wind energy into the local supply grid
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Scattered wind energy deployment as a first step in hydrogen implementation in petrol stations
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Offshore Wind Development in a High Energy Environment
Julian Galloway, Hyder Consulting, UK

Exemplary and innovative project of demonstration : The 2 mw wind turbine of La Rochelle
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20 Case studies for predicting and verifying wind farm energy production
Per Nielsen, Energy and Environmental Data, Denmark
Lars Bo Albinus, Energy and Environmental Data
Thomas Sørensen, Energy and Environmental Data
Mads V. Sørensen, Energy and Environmental Data
Morten L Thøgersen, Energy and Environmental Data
Stefan Chun, Energy and Environmental Data
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Merdelou - the first windfarm of a German developer in France
Gerd Spenk, ENERTRAG International GmbH, Germany

Windfarm Project in a turnkey form
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FORECASTING WIND & SHORT TERM PREDICTION & WIND RESOURCES & DESIGN WIND CONDITIONS

Wind power prediction in complex terrain. Localpred & sipreolico
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The use of the Irish Wind Atlas in estimating t he energy production at wind farms in Ireland
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Localpred and regiopred: advanced tools for wind energy prediction in complex terrain
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Investigation of Energy Yield outputs from WindFarm
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Atmospheric boundary layer flows over a costal cliff
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Spatial coherence of the longitudinal turbulence component
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On the most likely EOG amplitudes
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Mean wake deficit in the near field
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Comparison of turbulence models for wind evaluation in complex terrain
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Review of Measure-Correlate-Predict Algorithms and Comparison of Four Approaches
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Using satellite microwave observations to improve knowledge of the offshore wind field
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Using Ensemble Forecasting for Wind Power
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Wind Resource Characterization in Mar del Plata-Argentine
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A study on new analytic method of wind atlas Prediction method by using three-dimensional fluid analysis.
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An alternative methodology for reducing uncertainties in wind potential assessment: generation of simulated wind surface series using low resolution atmospheric data
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Comparison of the wind climatology offshore in mediterranean basin from three models.
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Wind assessment: Customizing measurements
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Using the MM5 model for wind prediction in a complex terrain site
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Parameterisation of turbulence intensity distributions.
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Large Scale Hydrogen Production from Wind Energy in Patagonia ? A Feasibility Study ?
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Algorithm for the estimation of the long-term wind climate using a joint probability approach
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A nonlinear model MASCOT: development and application
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Computer Control System for windmills electrical energy production control
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Topographical Effects on Turbulence Characteristics of Wind Flow over Complex Terrain
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Higher-order closure meso-scale modelling for wind climate estimates
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Refinement of numerical wind forecasts using a high-resolution roughness map
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A study of mountain valley winds using the MIUU mesoscale model
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On the definition of a quality index in the verification of power prediction models
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On the uncertainties of using local wind prediction as intermediate step in wind farm power output prediction.
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On the need of a standard for the determination of Weibull parameters.
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Wind climate in Greece
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The wind conditions at flat roofs for small wind turbines
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Adaptation of existing wind turbines for operation on high wind speed complex terrain sites; kwh cost reduction. The ADAPTURB project
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Analisys of the wind resources: wind prediction as a strategie to increase the wind energy penetration in weak electrical grids.
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A Simple and Adaptable Approach to Forecasting Output from Individual Wind Farms
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Wavelets improve the short-term prediction
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The longest short-term prediction
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Gamesa Energia Cassandra proyect
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Wind Resources at Horns Rev and Laesoe, Denmark
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Obtaining a velocity field in areas assigned to wind farms through CFD simulations
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Dynamic model for energy predictions in WECS.
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Micrositing - experiences from a rough coast in Norway
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Influence of Thermal Stratification on Wind Profiles for Heights up to 130 m
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Trial implementation of the Prediktor wind power forecasting system in Ireland.
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A new statistical tool for making probabilistic wind power production forecasts.
John Bjørnar, Norwegian Meteorological Institute, Norway

ANEMOS: Development of a Next Generation Wind Resource Forecasting System for the Large-Scale Integration of Onshore & Offshore Wind Farms.
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And 25 co-authors,

Influence of wind field generation methods on wind turbine fatigue loads
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Assessment of mini-sodar data against sonic and cup-anemometers ; Application to the analysis of the wind speed profiles in the surface layer.
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Forecasting wind power by a quarter of the hour
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Iset - wind - index - Assessment of the Annual Wind Energy Potential
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Previento - Short-Term Wind Power Prediction for Offshore Sites
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Meso- and micro-scale flow modelling inThe Gulf of Suez, Arab Republic of Egypt
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Measurement and simulation of wind energy at Tokyo Bay Area
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Effect of terrain configuration on vertical wind profile measured by SODAR
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"Wind Development Atlas of Southern Australia
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Short-term prediction of wind energy production, using historical data with three daily registrations
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New Coastal Wind Atlas for the Baltic Countries. Ole Rathmann, Risø National Laboratory,, Denmark
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Mesoscale Numerical Prediction of wind fields and validation.
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Brazilian Wind Atlas
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Wind turbine wake models for engineering predictions of wind farm outputs
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Evaluation of the MORE-CARE Wind Power Prediction Platform. Performance of the Fuzzy Logic Based Models.
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Wind-Potential Estimation for wind-farms in Complex Terrains
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CFD Modelling of the Wind Climatology at a Potential Offshore Wind Farm Site
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On a correlation between complex terrain orography and turbulence
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Validation of wind prediction methods for waters offshore of the United Kingdom
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Adaptive forecast combination for the efficient prediction of wind energy production
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Development of Efficient Wind Power Prediction Systems: Anemos Project. Contribution of the IDAE.
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Wind resource assessment by remote sensing data : Gulf of Saint Lawrence case
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"Offshore wind measurements with a meteorological buoy: Quality or Scrap?"
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First Results from a Prediction Project
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An Assessment of Wind Power Forecasting Skill and Factors Contributing to Forecast Errors in Southern and Northern California

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Relationship beetwen the energy and the change of direction of the wind

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Forecasting of Regional Wind Generation by a Dynamic Fuzzy-Neural Networks Based Upscaling Approach

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The similarity principle - on using models correctly

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A new Wind Atlas of Poland (on-shore and off-shore)

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Regional Prediction of Wind Power

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Extreme gusts at non-extreme mean wind speeds

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Extrapolation of extreme wind loads during normal operation

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Wind- and Turbulence Measurements with Sodar - New Aspects for Windenergy Siting and Repowering

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An International Design Standard for Offshore Wind Turbines

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Errors introduced by satellite sampling of offshore wind speeds

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Short-term local prediction model at the strait of Gibraltar based on perfect prognosis method

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Cassandra Project Results of wind power 72-h range daily operational forecast in Spain.

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On The Use of Reanalysis Data for Comparative Regional Resource Assessment

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Comparison of Wind Resource Assessment Techniques

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Roughness maps and wind speed data for The Netherlands

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'Wind gusts and their impact on the power curve calibration and on extreme loads'

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An approach to the expected wind energy production variability in Portugal

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Modelling the Uncertainty of Wind Power Predictions

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Comparative Study of the Behaviour of Several Wind-Turbines in a Wind Farm

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Importance of thermal effects and sea surface roughness for offshore wind resource assessment

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Study of Integration Possibilities of Wind Energy with the Polish Power Grid

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A method for wind data gaps recovery in complex terrain

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Wind Assessment of Madagascar Island by Means of Statistical Dynamical Downscaling

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A methodology to compute wind resource grids in complex terrain based on multiple anemometric stations

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Methodology for Development of the Sardinian Wind Resource Map

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Wind Flow over Complex Terrain: Application of Linear and CFD Models.

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A Dynamical-Statistical Downscalig Procedure for Local Wind Climate Assessment

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Evaluation of the theoretical and technical wind potential on the Libyan coast.

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Effect of climate change on wind power potential in Finland

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National wind farm resource assessment program in China

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Short-Term Wind Forecast. Results of First Year P lanning Mainte-nance at a Wind Farm.

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A method for quick wind energy assessment of an area using a wind correlation model

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Vertical Profile of Wind. Comparison of 3 SODARs and a 100m-high Meteorological Mast.

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Wind- and Turbulence Measurements with SODAR - New Aspects for wind energy siting and Repowering

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Wind Energy Potential on La Venta, Mexico: an analysis of probability distribution functions

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Wind energy converter siting in complex forest landscapes

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Short-Term Prediction of Energy Production in Complex Terrain

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Wind mapping in Canada with WEST

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AERODYNAMICS & AEROELASTICITY & LOADS & SAFETY

Analysis of lightning incidents on wind turbines in Greece

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Phenomenological modelling of Vortex generators

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Frequency domain load calculation for offshore wind turbines including full system dynamics (TURBU Offshore).

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3D Euler simulations of the flow around a wind turbine rotor

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Detailed aerodynamic measurements on wind turbines: Analyses of results

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Power Performance warranty problems in complex terrain.

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Performance of a stall regulated wind turbine in a cold climate.

Jørgen Højstrup, Risø National Laboratory, Denmark

Improvement of rotor stall models by analyses of the IEA field test data.

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Nacelle Wind Speed Correction for Power Performance Testing
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Aerodynamic noise simulation of a wind turbine blade using Large Eddy Simulation and Kirchhoff's Theorem
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An inconsistency in the actuator disc momentum theory.
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A comparative study of numerical schemes and turbulence models for wind turbine aerodynamics modelling
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Wind tunnel measurements on two Risø-B1 airfoils
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Seismic Analysis of Wind Turbines using a time domain approach
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Field tests on a small HAWT with passive pitch-flap mechanism
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A novel approach for the aerodynamic design of wind turbine airfoils
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Load analysis and certification of offshore wind turbines
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The effect of wave non-linearity on the forces on a wind turbine foundation in shallow water
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An assessment of combined external wind and wave conditions for extreme loads on offshore wind energy converters
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Determination of Aerodynamic Loads Acting on a Typical Wind Turbine Blade by means of 3 Dimensional Numerical Analysis.
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Implementation of the Spalart Allmaras turbulence model for expansion of the predictional capabilities of a dynamic stall flow solver
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Detached-Eddy Simulation of flow around the NREL-Phase-VI Rotor
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Wind turbine dynamics in power system studies or the other way around
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Reynolds Number Effects on Thick Aerodynamic Profiles for Wind-Turbines
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Reducing Wind Turbines O&M Costs RCM Derived Method and Case Study
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Unsteady potential analysis for the aerodynamics and acoustics of low speed rotors
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A Lifting line Theory for the Determination of Wind Turbine Blade Optimum Performance
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Wind repowering: Cañada del Rio wind farm repowering project as a case study.
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Site Calibration of a Flat Test Site
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Estimation of Fluctuating Output in Wind Farm -Evaluation Method of power output-
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Recent development of non-linear aero-acoustic model for wind turbine computations
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SmartYaw – a new concept to decrease extreme loads
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Wind energy reliability data, a round-up from several data bases
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Estimation of Fluctuating Output in Wind Farm -Investigation of Rotor Wake-
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Wind turbine airfoil optimization by Genetic Algorithm
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Determination of section characteristics for wind turbine profiles
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Verification and validation of adaptive, unstructured calculations of the flow around the DU91 airfoil
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Fatigue Loads Calculation of a HAWT Rotor Operating in a Turbulent Wind Field
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Development of ice protection system for wind turbine rotor blades
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Wind Guarding, An Innovation Aiming to Optimise the Performance of Wind Farms and to Reduce the Cost of Wind Energy
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Critical wind speed gusts identification in complex terrain using advanced windowing technique
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Influence of Different Atmospheric Turbulence Modelson the Calculated Fatigue Loads of Large Wind Turbines
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Operation Assessment of a Complex Terrain Wind Farm, consisting of Various Types of HAWT's
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Numerical verification of an airfoil for small wind turbines at low Reynolds numbers
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Response extrapolation for offshore wind turbines
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Modelling, verification and classification of ice loads in wind turbines
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Power Quality Analysis of Wind Turbines.
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Design of Soft Mounts for Vibration and Shock Protection
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Study of tip-loss using an inverse 3d navier-stokes method
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Blade-Element / Momentum Technique

for Rotors Operating in Wind Tunnels
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The actuator line technique: A hybrid 3d navier-stokes / aeroelastic model
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Mechanical brakes for wind turbines today and tomorrow"
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Design tools for the prediction of the buckling strength of rotor blades.
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Validation of tip corrections for wind turbine computations
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Aeroelastic stability analysis of variable-speed pitch-controlled wind turbine rotor blades.
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Real time process simulation for evaluation of wind turbine control systems
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Computational Prediction of Wind Coupled with Complex Topography
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Calculating local aerodynamic loads from detailed near wake velocities
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Power Control of NEG Micon Wind Turbines
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Comparison of two-dimensional aerodynamic characteristics of airfoils at angles-of-attack from 0 to 360 degrees
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Experimental Investigation of Unsteady Aerodynamic Forces on Airfoil in Harmonic Translatory Motion
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Numerical study of the flow around vertical axis wind turbines
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Simulation of a wind turbine wake in yaw
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Navier-Stokes Analysis of the NREL Phase VI Experiment in Stall
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GRID INTEGRATION & ELECTRICAL DESIGN & CONTROL

Transmission systems requirements and advanced wind farm control
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Vector Control of Wind Turbines Based on Asynchronous Machines and their Integration with the Grid
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Forming on the Aggregation of Wind Farms in Distribution Networks
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General model of double fed induction machine usedin wind power generators
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Analysis of the introduction of large scale wind energy into the greek electricity system
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Wind farm integration- Power quality management for French distribution network
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Sensorless control in wind energy conversion systems
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Dynamic Power System Interactions with Large Wind Power Integration
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Identification of aerodynamics and drive-train dynamics for a variable speed wind turbine
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Advanced control of mechanical brakes for wind turbines: the Sobo concept.
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Wind Power Generation Plants Using an Inertial Energy Storage System
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The new compact IFEA 500 wind power generator of Winergy
Toni Herrmann, Winergy AG, Germany

Remarks on Insulation Coordination Requirements in Wind Farm Installations
Ferdinand Lutz, System Innovation Institute, Germany

Grid Integration of Wind Turbine Generators and Their Impacts on Utility Protection Relay
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Power quality requirements for grid connected wind turbines: a Brazilian experience.
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Network connection of large offshore wind farms
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Wind turbines designed to support the grid
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A dynamic model for windturbine with the choice of different generators, with or without blade pitching.
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On-line supervisory and control centre for wind farms
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Control of a Wind Turbine with Doubly Fed Induction Generators after Transient Failures like Short Circuits
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Known and Anticipated Problems of Wind Farms' Interconnection
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Reactive Capability Limitation of Doubly Fed Asynchonous Generators
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Wind Power Integration in Areas with Congestion Problems and Storage Capabilities
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Brushless Doubly-fed Asynchronous Generator model for Variable Speed Wind Generation Systems
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The Technical and Commercial Impact of Grid Codes on Wind Farms
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Grid Connection of Wind Farms
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Transmission system issues for large scale wind energy penetration - the greek experience
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Integration of large scale wind farms with Tasmanian HVDC and grid systems
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Wind farms modelling and equivalenting
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A simulation of a matrix converter with variable input frequency
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Practical Windfarm Output Regulation via SCADA
Kenneth Cohn, Second Wind Inc, USA
Susan Giordano, Second Wind Inc.

Wind Farm Protection from Voltage Sags
Bud Kehlri, American Superconductor, USA
Werner Zoske, American Superconductor Europe GmbH

Development of the NorthWind 1.5/70 Direct Drive Permanent Magnet Generator Wind Turbine Under the US DOE WindPACT Program
Garrett Bywaters, Northern Power Systems, USA

Overvoltage protection of wind turbines
Óscar Hinojosa, DEHN Ibérica S.A. (DEHN + SÖHNE), Spain

Implementing a Wind Energy Conversion System Equipped With Double Fed Wound Rotor Induction Generator Using EMTP/ATP Program
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Analysis of the behaviour of asynchronous wind turbines under network frequency variations
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"WindPRO - eGRID"
A Tool for Grid Integration of Wind Farms
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Investigation of the power quality limits of wind energy converters' grid connection
Detlef Schulz, Technical University Berlin, Germany
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Efficient running of a Wind/Gas 'Virtual Power Plant'
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Development an voltage regulators for standalone windmills with asynchronized synchronous generators
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Feedforward control of stall-regulated, variable speed wind turbine - a microcontroller approach
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CleverFarm First results from an intelligent wind farm
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Lars Landberg, Risø National Laboratory
Claus Bjerge, Risø National Laboratory
Martin Heyman Donovan, Risø National Laboratory
Axel Juhl, Risø National Laboratory
Klaus Gram-Hansen, Risø National Laboratory
Hans-Peter Waldl, Risø National Laboratory
Thomas Pahlke, Risø National Laboratory
Jochen Giebhardt, Risø National Laboratory
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Grid connection options for large offshore wind farms in the Irish Sea.
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Statistical distribution of voltages in grids with wind farms
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José Antonio Domínguez, CIRCE Foundation and the Electrical Engineering Department of Zaragoza University,
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Adaptation of Wind Farm Power Factor Correction to Utility Networks
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Multi-machine model of a real wind farm: Analysis of interactions between generators in islanding operation
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Ector control, direct torque control and direct power control performance in doubly fed induction generator for variable-speed wind turbine
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The impact of an increasing amount of Wind Power on the High Voltage Grid of Costa Rica
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Spread of Electrical Harmonic Current Distortion
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Modeling wind turbine generators for power system simulations
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Control for damping the fatigue relevant deformation modes of offshore wind turbines
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Providing a wind farm control facilities for safe power systems operation
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Control of doubly-fed induction generator integrated with the grid
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Ultracapacitors
A perfect fit for the power electronics
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Grid connection of wind farms.
Flicker as a delimiting factor regarding power quality
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Impact of off-shore wind generation on the Belgian HV grid
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Johan Driesen, Katholieke Universiteit Leuven
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Integration of large-scale windfarms into grids, technical aspects of transmission system design and grid control
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Frank Berger, Vattenfall Europe Transmission

Crossing resonance rotor speeds of wind turbines
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DEVELOPMENT OF MEASUREMENT METHODS

Full-scale blade testing enhanced by acoustic emission monitoring
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Recent Advances on Damped Wind Turbine Rotor Blades, the DAMPBLADE project
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Statistic analysis of large calibration series of NRG Max.40 cup anemometer in wind tunnel.
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Nicolai Benldehiez, IDR. ETSI Aeronáuticos
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Stainless steels long products for wind power engineering : an excellent long term investment.
Eric CHAUVEAU, Ugine-Savoie Imphy, France
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Fault prediction techniques for offshore wind farm maintenance and repair strategies
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New Lightning Qualification Test Procedure for Large Wind Turbine Blades.
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A Benchmark on Lifetime Prediction of Composite Materials
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Ice-free wind sensors - results from the eumetnets sws ii project
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Wind Turbine Monitoring System using LabVIEW
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Testing as a development tool for a new Blade Structure
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Analysis of Wind Turbine Control and Performance based on Time Series Data of the Wind Farm Monitoring System
Axel Albers, Deutsche WindGuard Consulting Gmbh, Germany
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3d large scale metrology applied to Wind turbine manufacturing
Thomas Rietze, Leica Geosystems AG Metrology Division, Switzerland
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Turbulence Correction for Power Curves
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Harald Hohlen, DeWind GmbH
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A Shear Beam Finite Element for Predicting the Damping of Composite Wind-Turbine Blades
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Comparing SODAR to cup anemometer measurements
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Dynamic Modeling and Simulation of Wind Turbine
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An assessment of the critical role that glass fiber reinforcements play in the fabrication and performance of windmill blades
Claude M. RENAUD, Owens Corning Composites, Belgium
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Load measurements on "GE Wind Energy 3.6 o " according to IEC with focus on data acquisition of dynamic signals with sampling rates in the kHz-range
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State of the art of the industry for wind power towers
Orazio Davi, PROMAU SRL, Italy

Structural parts castings. Surface state and fatigue behaviour
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CONMOW: Condition Monitoring for Offshore Wind Farms
H. Braam, ECN Wind Energy, Netherlands
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A Technique for Alignment to True North Based on Camera in Meteorological Installation
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Options in Anemometry Evaluation and Classification
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Mechanical and physical test data of laminates in wind turbine blade manufacture.
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Set-up and analysis tool for fatigue testing of large wind turbine blades
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Innovative Wind Turbine Testing Centre in Spain
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Wind Farm Perfomance Evaluation in Complex Terrein
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Performance Testing of Wind Turbines on Jeju-Do Island in Korea
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2003 EWEC European Wind Energy Conference & Exhibition
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Acoustic emission condition monitoring of wind turbine rotor blades: laboratory certification testing to large scale in-service deployment
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Development and Evaluation of Different Fatigue Design Methods for OWECs under Wave Loading
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LARGE WIND TURBINE DESIGN & INNOVATIVE OFFSHORE DESIGN

How to benefit from cost modelling of offshore wind farms?
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H.J.T. Kooijman, ECN Wind Energy
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Offshore Access System for Maintenance Purposes
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R Prins, Fabricom Oil & Gas
J. Berg, Fabricom Oil & Gas

Avantair – A revolution in wind turbine generator cooling systems
Ray Blundell, Heat Exchange Industries Ltd, UK

Connecting tower sections and tower to foundation with high performance grout
Anders Moeller, Densit A/S, Denmark
Claus Burchardt, Barsmark A/S

Using wind turbine machine to reduce carbon dioxide emission in shrimp farm aeration process
Wirachai Roynarin, Northumbria University, England
P.S. Leung, Northumbria University
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Concepts of Offshore Wind Turbines Foundations Adapted to French Coasts Conditions
Jacques Ruer, Saipem s.a., France
Edmond Coche, Saipem s.a.
Alain Puech, Fugro France
Wilfried Pimenta de Miranda, Saipem s.a.

Potential Improvement of Wind Turbine Array Efficiency by Active Wake Control (AWC)
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Davide Medici, KTH

A Study of Twisted Sweeney Type Wind Turbine Ayumu ANZAI, Ashikaga Institute of Technology, Japan
Yasuyuki NEMOTO, Collaborative Research Center, Ashikaga Institute of Technology
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Design Optimization of Complex Loaded Tower Using Composite Materials in Off and On Shore
Son Choong-Yul, Naval Architecture & Ocean Engineering, In-ha University, South Korea
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Comparative investigation of belt/sparweb designs in glass/epoxy and carbon/epoxy on wind turbine rotor blades of the multi-megawatt class
Heiko Hartfiel, EUROS GmbH, Germany

An Introduction to Energy Storing Wind Dams and their Enabling Technology Developments
Allan McCreadie, Armadillo Engineering Co. Ltd, New Zealand
Peter Campbell, Armadillo Engineering Co. Ltd

Feasibility Study on Floating Wind farms for Intermediate Depth Offshore Sites
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Martijn Wolf, TNO Bouw
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Jan Pierik, ECN
Rene Huijsmans, MARIN
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Determination of Geometrical Shape and theoretical Performance of a Wind Rotor Blade of 1 MW WECS at Low Wind Speed Regions
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Multibody-System-Simulation of complete Drive Trains of Multi-Megawatt-Wind-Turbines
Berthold Schlecht, Institute of Machine Elements and Machine Design, Germany
Tobias Schulze, Institute of Machine Elements and Machine Design
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Offshore Wind Turbine Installation, lessons learned on the Horns Rev Project/DK
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Martin Huss, A2SEA A/S

New results out of the DOWEC project; design variations on a 500 MW wind farm
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Method to Coordinate the Use of Three Different Wind Turbine Systems in a Wind Farm Using Small Volume Compressed Air Storage (CAES) to Supply Uninterrupted Power to Locations Remote from the Power Grid
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Paul Lieberman, Lieberman Research Associates
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Wind Turbines designed for cyclonic islanding environment Case Study : Col de Prony, New Caledonia
Aurélie Fabre, VERGNET, France

Installation of offshore windturbines
R.K.N.J. Prins, P&R systems, Netherlands

Offshore Load Transfer System
R.K.N.J. Prins, P&R systems, Netherlands

Advanced Tower Solutions for large wind turbines and extreme tower heights
F.J. Brughuis, Mecal Applied Mechanics BV, Netherlands

New Medium Voltage Converter Design of High Power Windmills
Dejan Schreiber, SEMIKRON International, Germany

Development of Wire cable Suspended Horizontal Axis Wind Turbine -Field test of small wind turbine
T. Ezaki, Engineering Graphics Lab. & The department of Electrical Engineering, Fukuoka University, Japan
Y. Neba, Engineering Graphics Lab. & The department of Electrical Engineering, Fukuoka University

Press statement - wind mill exhibition in Madrid Novelty - service lift
Niels Bramsen, Avanti Stigefabrik A/S, Denmark
Gunnar Petersen, Avanti Stigefabrik A/S

Building Integrated WARPTM Windpower Technology for Architecturally, Economically & Environmentally Attractive On-site Electric Energy
Alfred L. Weisbrich, ENECO/ENECO-Texas LLC, USA
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Purpose designed blade for wind turbines - A new reality!
Ole Sangill, Norwin A/S, Denmark
Peter Fuglsang, Risø National Laboatory
Peter Hansen, LM Glasfiber A/S
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The utilization of wind energy in ecological agrar production by innovative wind engine.
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Miklós OROSZ, BIO-SYSTEAM Company
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Sándor SZABÓ, BIO-SYSTEAM Company
Károly TAR, University of Debrecen, Meteorological Department
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Cost-reduction of offshore wind parks by low-cost load-monitoring of pile foundations.
J. Hessels, HVR-Engineering, Netherlands
J. van Rooij, HVR-Engineering
H. den Boon, E-Connection

Press statement - wind mill exhibition in Madrid Novelty - climbing assistance
Niels Bramsen, Avanti Stigefabrik A/S, Denmark
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Robustness of Offshore Wind Turbine Design Calculations
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Assessment and optimisation of operation and maintenance of offshore wind turbines
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Consequences of steep waves and large wave force to offshore wind turbine design
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Niels Jacob Tarp-Johansen, Wind Energy

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The Developent of small VAWTs for the built environment
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"ENERLIM Translational Wind Turbine Garay Oscar Fundación LEIA C.D.T. Spain Garayo Iñaki ENERLIM ALBIA S.L.
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Efficient offshore wind turbine foundations
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Development of a MW scale wind turbine for high wind complex terrain sites; the MEGAWIND project
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AUTONOMOUS, HYBRID & DESALINATION SYSTEMS

The ways of increasing efficient use of wind energy in Georgia
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Method to Coordinate the Use of Three Different Wind Turbine Systems in a Wind Farm Using Small Volume Compressed Air Storage (CAES) to Supply Uninterrupted Power to Locations Remote from the Power Grid
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Paul Lieberman, Lieberman Research Associates
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Offshore water desalting using on-site generated Wind Power
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Wind pumps in Sudan
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Optimisation of integration of wind energy in autonomous diesel power systems using a new algorithm based on genetic algorithms
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Design and development of a hybrid autonomous system for seawater desalination
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Validation of dynamic simulation of an experimental wind/diesel system with a high speed flywheel energy storage system
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Hybrid systems: wind and gasoline
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HySyS v.1.0 - Hybrid Power System Balance Analyser
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Performance evaluations of ropatec small power wind turbines
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An implementation of an innovative supervisory controller for a wind diesel system (seductor project)
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Design, construction and test of a new 50 kW High Speed Flywheel for wind/diesel systems application Ignacio Cruz, CIEMAT-DER, Spain
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Investigations of an autonomous Wind/Diesel-System in Brazil
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Study on Installing Site Selection of Small-scale Vertical Axis Wind Turbine on the Roof
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Dynamic voltage control techniques and self-tuning fuzzy control for high-penetration stand-alone and islanded wind power systems.
P. Taylor, Econnect Ltd, UK
R. Kemsley, Econnect Ltd
D. Rollinson, The Manchester Centre for Electrical Energy
I.Williamson, Econnect Ltd

Distributed control of wind diesel systems based on CAN network
R. Sebastián, Departamento de Ingeniería eléctrica, electrónica y de control / UNED, Spain
M. Castro, Departamento de Ingeniería eléctrica, electrónica y de control / UNED
F. Yeves, Departamento de Ingeniería eléctrica, electrónica y de control / UNED
J. Peyre, Departamento de Ingeniería eléctrica, electrónica y de control / UNED

Analysis of the use of wind powered reverse osmosis sea water desalination plants in the Northeast Region, Brazil
Paulo Cesar Marques de Carvalho, DEE – UFC
Universidade Federal do Ceará, Brazil
Douglas Bressan Riffel, DEE – Universidade Federal do Ceará

Design and Optimisation of Wind / Hydrogen Stand-alone Power Systems on a Norwegian Island"
Finn K. Nyhammer, Kjeller Vindteknikk AS, Norway
Ronny Glöckner, Institute for Energy Technology
Pål Otto Eide, Hydro Energy ASA
Einar Berg, Landscape architect
Elise Førde, Statkraft Grøner AS

Wind Energy and Hydrogen
R. Garde, Spanish National Centre for Renewable Energies (CENER), Spain
J Sanz, Spanish National Centre for Renewable Energies (CENER)

Influence of variations in frequency and voltage in desalination plants connected to wind systems isolated from the main grid
Jaime González, University of Las Palmas de Gran Canaria, Spain
José A. Carta González, University of Las Palmas de Gran Canaria

PV – wind hybrid supply for uv – sterilization of potable water in a batch process
Antonio Sarmiento, Havana Technical University, CUJAE, Cuba
Klaus-Ulrich Heinen, Applied Science University of Cologne
Luis Guerra, Havana Technical University, CUJAE
Daysi Gómez, Havana Technical University, CUJAE
David Toledano, Havana Technical University, CUJAE

Use and production of wind mill: the key for agriculture development in Cuba.
Conrado Moreno, Renewable Energy Technology Research Centre (CETER), Cuba

Improving the reliability of stand-alone wind power installations using small photovoltaic generators
J.K. Kaldellis, Lab of Soft Energy Applications & Environmental Protection Mechanical Eng. Dept., TEI of Piraeus, Greece
KA Kavadias, Lab of Soft Energy Applications & Environmental Protection Mechanical Eng. Dept., TEI of Piraeus
Ef Xirakis, Lab of Soft Energy Applications & Environmental Protection Mechanical Eng. Dept., TEI of Piraeus
J. Bakalexis, Lab of Soft Energy Applications & Environmental Protection Mechanical Eng. Dept., TEI of Piraeus

Technical and economical sizing of wind parks in autonomous diesel power systems
Paul STELIZUK, Ecole des Mines de Paris, France
François Pascal NEIRAC, Ecole des Mines de Paris

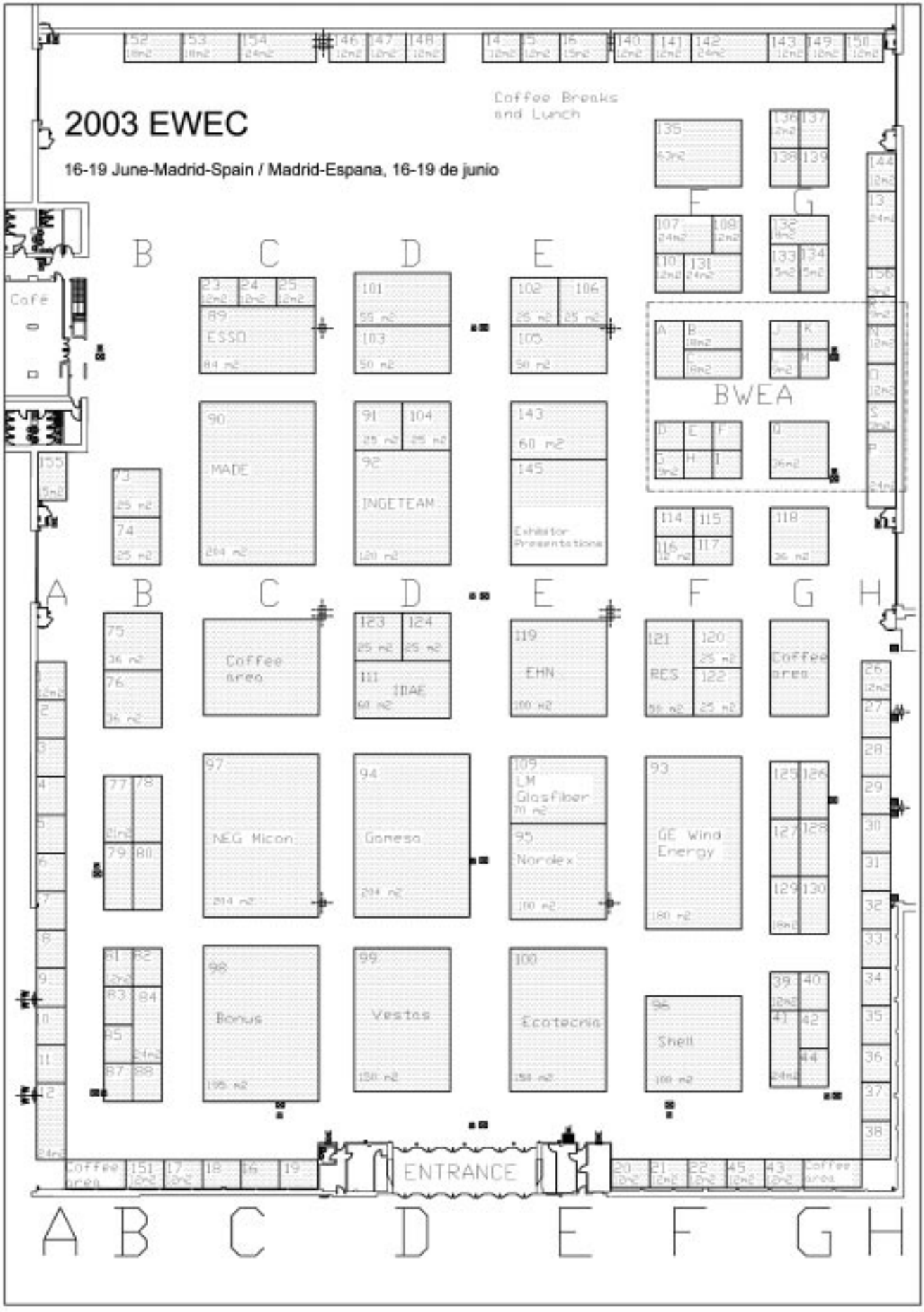
Irrigation through windmills
Josep Tarragó i Vilarrubí, Molins de vent Tarragó, Spain
Rosa M. Tarragó i Agustí, Molins de vent Tarragó

Confirmed Exhibitors • Expositores Confirmados

Organisation	Country	Stand No.
A2SEA	Denmark	A12
ABB New Ventures	Germany	B75
Advanced Composites	UK	H13
Aegis Rubber Engineering	UK	BWEA-J
Aerodyn Energiesysteme	Germany	A1
Ahlstrom Glassfibre Oy	Finland	B77
Airtricity	Ireland	B76
All Energy Opportunities	UK	BWEA-G
Allen Gears	UK	BWEA-H
American Superconductor Europe GmbH	Germany	F108
American Wind Energy Assoc. (AWEA)	USA	F115
Aria Technologies	France	H33
Avanti Stigefabrik	Denmark	A2
BONUS Energy	Denmark	C98
BP Solar Espana	Spain	D101
British Wind Energy Association	UK	BWEA-R
Brøndberg & Tandrup International	Denmark	F117
C.C. Jensen	Denmark	B88
C.R.E.S. Centre for Renewable Energy Sources	Greece	G130
Cambrian Engineering	UK	BWEA-I
CEDRAT	France	C25
CENER, Renewable Energy National Centre of Spain	Spain	G126
CFE	France	D148
Circutor SA	Spain	F141
Citel - Obsta	France	H29
Corus Bi-Steel	UK	BWEA-B
CSIRO-Wind Energy Research Unit	Australia	F21
CV	Spain	G138
Danish Wind Industry Association	Denmark	B82
Davi - Astrida	Italy	C19
Demag Cranes & Components SA	Spain	H144
Densit	Denmark	G39
Deutsche Windguard	Germany	G136
DEWI - Deutsches Windenergie-Institut GmbH	Spain	A8
DNV	Denmark	C17
DTI Sustainable Energy Programme	UK	BWEA-P
ECN Wind Energy	The Netherlands	F135
Ecofys	The Netherlands	F135
Ecotécnia	Spain	E100
EdF (Electricite de France)	France	E105
Editorial Alcion Ingeniería Química SA	Spain	C23
EHN (Energia Hidroelectrica de Navarra)	Spain	E119
Enercon	Germany	G118
Energetica XXI	Spain	D147
Energi- og Miljødata (EMD)	Denmark	H26
Energias Renovables	Spain	F140
Equipamientos Eolicos S.L.	Spain	C153
Esso Espanola	Spain	C89
Etemegy	Germany	E14
Eurolinx	UK	BWEA-R
EUROS GmbH	Germany	A5
EWEA	Belgium	D124
FME	The Netherlands	F135
FORCE Technology	Denmark	A10
Fugro	UK	BWEA-D
Fuhrländer AG	Germany	E106
Gamesa Eolica	Spain	D94
Garrad Hassan	UK	BWEA-A
GC Power Corporation	USA	G139
GE Wind Energy	Germany	F93
Geonica	Spain	B85
Germanischer Lloyd WindEnergie GmbH	Germany	G129
Gestion Optilog inc	Canada	B81
Global Marine Systems	UK	BWEA-L
Global Renewable Partners	Denmark	D91
Goodman Business Press SA	Spain	H156
GWU-Umwelttechnik	Germany	C24
Hailo	Germany	H32
Hansen Transmissions	Belgium	A3
Harting	Germany	H35
HEFA	Denmark	F120
Hydro Tasmania	Australia	F22
Iberdola Ingenieria Consultoria	Spain	C18
IDAE	Spain	D111
Indutrans	Denmark	F120
Infopower	Spain	B87

Ingeteam	Spain	D92
Invest Australia	UK	F45
IRO	The Netherlands	F135
ITH-GmbH	Spain	A155
James and James	UK	G41
John Brown Hydrocarbons	UK	BWEA-F
John Mowlem & co. Plc	UK	BWEA-C
John Wiley & Sons	UK	H28
KGW Schweriner Maschinenbau GmbH	Germany	A4
Kraus Elektrotechnik	Germany	H34
Las Energias	Spain	E15
LM Glasfibre	Denmark	E109
MADE Tecnologias Renovables	Spain	C90
Mammoet van Oord	The Netherlands	B84
Masons	UK	BWEA-M
Matz-Erreka	Spain	A6
Mayflower Energy Limited	UK	BWEA-Q
METEK GmbH	Germany	B83
Meteotest	Switzerland	H38
Mott McDonald	UK	BWEA--K
NEG Micon	Denmark	C97
NEWIN - Netherlands Stand	The Netherlands	F135
Nida-Core Corp.	USA	G137
NORDEX	Germany	E95
NRG Systems	USA	B80
NUON	The Netherlands	F135
Offshore Composite Structures Ltd	UK	G134
Olaer-Oiltech Iberica	Spain	H36
Optral	Spain	G125
Orga	UK	G44
Orrick, Herrington & Sutcliffe	USA	B151
Owens Corning Composites	Belgium	B78
Power Expo 2004	Spain	G40
Power Technologies (PTI)	UK	G128
PricewaterhouseCoopers	Spain	F114
Promau	Italy	C19
Pujol Muntala	Spain	B73
Qinetiq	UK	G133
RE Focus	UK	A11
RE GEN	UK	G143
Reetec Wind Espana	Spain	B79
Renewable Energy Systems	UK	F121
Renewable Energy World	UK	G41
Renewables Northwest	UK	BWEA-N
REpower Systems AG	Germany	C154
ReSoft	UK	BWEA-O
Risoe National laboratory	Denmark	B74
Rollix Defontaine	France	D123
Roxtec	Spain	G132
Saertex Wagener	Germany	H27
Saint-Gobain Advanced Ceramics	USA	A7
SCANVIB	Denmark	F122
Sea Wind	UK	A9
Second Wind Inc.	USA	H30
Servicios de Ingeniera y Montaje Alen	Spain	G42
Shell Wind Energy	The Netherlands	F96
SIF Group	The Netherlands	D104
Sinae Energia y Medioambiente S.A.	Spain	E143
SLP Energy	UK	BWEA-E
Smulders Groep	The Netherlands	D104
Sociedad General de Importaciones S.L.	Spain	B152
SP Systems	UK	D103
Swantech	USA	H37
Swedish Wind Energy Technology Group - SWIND	Sweden	E16
Talleres Amenabar SA	Spain	H150
Tecniforja-Metalcam	Spain	G142
Texsys	France	G149
Trinity House Lighthouse Service	UK	BWEA-S
TrueWind Solutions LLC	USA	H31
TU Delft	The Netherlands	F135
TÜV NORD GRUPPE	Germany	F131
Vantico Structural Composites	Switzerland	F110
Vector	Norway	F20
Ventogal SA	Spain	E102
VESTAS Wind Systems	Denmark	D99
Victorian Government	Australia	F43
Western Windpower	UK	G127
Windpower Monthly	Denmark	F116
WindPro	UK	C16
WINDTEST Grevenbroich GmbH	Germany	G129
WINDTEST Kaiser-Wilhelm-Koog GmbH	Germany	G129
WinWinD	Finland	F107

Exhibition Floor Plan • Plano de la Exposición



Technical Visits • Visitas Técnicas

Gamesa Windfarm

The wind farm consists of 28 Gamesa Eólica G58-850 kW wind turbines, with a total installed capacity of 23.8 MW. These are 3 bladed, upwind, pitch regulated, active yaw turbines, with rotor diameter of 58m. Participants will receive a tour of the wind farm, situated in the breath-taking scenery around the magnificent city of Toledo.

Participants may wish to combine the visit with the visit to the Cuenca root joint manufacturing facility (see below). Please indicate your preference on the registration form.

Visit date: Friday 20th June
Total travel time: 3 hrs
Visit duration: 1 hr

Parque Eólico de Gamesa en Toledo

El parque eólico está formado por 28 aerogeneradores Gamesa Eólica modelo G58-850 kW, con una potencia total instalada de 23.8 MW. El modelo G58-850 kW es un aerogenerador de rotor tripala a barlovento, regulado por sistema de cambio de paso y un sistema de orientación activo, y cuenta con un rotor de 58 m de diámetro.

Los participantes podrán combinar esta visita con la de la planta de fabricación de raíces de pala de Gamesa en Cuenca (ver abajo). Por favor, indique sus preferencias en la hoja de registro.

Fecha: viernes 20
Tiempo total de viaje: 3 hrs
Duración de la visita: 1 hr + visita a Toledo

GE Wind Energy 3.6MW Prototype

GE Wind Energy Spain installed their first 3.6 MW Offshore prototype turbine at Barrax in Albacete (Castilla La Mancha) in the first half of 2002. The visit will include a 30 minute presentation and video of turbine characteristics, the installation process, and target markets. A lunch will take place in La Roda, in the palacio of the Counts of Villaleal.

Participants may wish to combine the visit with the visit to the Noblejas factory (see below). Please indicate your preference on the registration form.

Visit date: Friday 20th June
Total travel time: 5 – 6 hrs
Visit duration: 2 hrs + lunch in La Roda

Prototipo de 3.6 MW GE Wind Energy

En la primera mitad de 2002, GE Wind Energy Spain instaló su primer protrotipo de aerogenerador Offshore de 3.6 MW en Barrax, Albacete (Castilla La Mancha). La visita incluirá una presentación y vídeo de 30 minutos explicando las características de esta turbina, el proceso de instalación y el mercado objetivo. Después de ello tendrá lugar la comida, en el palacio de los Condes de Villaleal, en La Roda.

Los participantes podrán combinar esta visita con la de la Planta de Noblejas (ver más adelante). Por favor, indique sus preferencias en la hoja de registro.

Fecha: viernes 20
Tiempo total de viaje: 5 – 6 hrs
Duración de la visita: 2 hrs + comida en La Roda

Gamesa Root Joint manufacturing Facility

The Gamesa Éólica Root Joint manufacturing facility is located near to the historic city of Cuenca, which will be included in the visit. The Facility can produce 5300 root joints per year, corresponding to turbine models G52-850kW, G58-850kW and G80-2.0MW. The manufacturing process consists of winding a cone of epoxy reinforced glass fibre. After being cured, this cone is separated from its mould and drilled with 52 or 90 holes (depending on the turbine model) into which metal inserts are pasted.

Participants may wish to combine the visit with the visit to the Toledo wind farm (see above). Please indicate your preference on the registration form.

Visit date: Friday 20th June
Total travel time: 4 hrs
Visit duration: 1 hr + visit to Cuenca.

Planta de fabricación de raíces de pala de Gamesa

La planta de fabricación de raíces de pala de Gamesa Eólica está próxima a la ciudad histórica de Cuenca, que será incluida en la visita. Esta planta tiene una capacidad de producción de 5300 raíces de pala por año, correspondientes a los modelos de aerogenerador G52-850 KW, G58-850KW y G80-2,0MW. El proceso de fabricación consiste en el bobinado de un cono con fibra de vidrio preimpegnada de resina epoxy. Este cono, después de ser sometido a un proceso de curado, es separado de su molde y se le realizan 52 ó 90 taladros longitudinales (dependiendo del modelo del aerogenerador), dentro de los cuales se pegan y curan una serie de insertos metálicos.

Fecha: viernes 20
Tiempo total de viaje: 4 hrs
Duración de la visita: 1 hr + visita a Cuenca.

Los participantes podrán combinar esta visita con la del parque Eólico de Gamesa en Toledo (ver arriba). Por favor, indique sus preferencias en la hoja de registro.

GE Wind Energy Turbine Factory

The factory is situated at Noblejas in the Toledo area, and was inaugurated in June 2000. At present, it manufactures GE's 1.5 MW turbines. The factory has a maximum production capacity of 400 wind turbines per year. The visit will include a detailed tour of the 2000 sqm Assembly Area. The trip would be completed before lunch.

Participants may wish to combine the visit with the visit to the GE 3.6MW Prototype (see above). Please indicate your preference on the registration form.

Visit Date: Friday 20th June
Total travel time: 2 -3 hrs
Visit duration: 2 hrs

Planta de aerogeneradores de GE Wind Energy

La planta está situada en Noblejas, en la provincia de Toledo, y fue inaugurada en junio de 2000. Actualmente se fabrican los aerogeneradores de 1.5 MW. Esta planta tiene una capacidad de producción de 400 turbinas al año. La visita incluirá un detallado tour por los 2000 m² del Área de ensamblaje. El viaje concluirá antes de la hora de la comida.

Fecha: viernes 20
Tiempo total de viaje: 2 -3 hrs
Duración de la visita: 2 hrs

Los participantes podrán combinar esta visita con la del Prototipo 3.6 MW (ver arriba). Por favor, indique sus preferencias en la hoja de registro.

Social Programme • Programa Social

CONFERENCE RECEPTION

The Conference Reception will take place on Monday 16th June, at the Palacio de Cristal de la Arganzuela. Musical entertainment will be provided at this spectacular location. Cocktails and canapés will be served from 21h00. Access at No.10 Paseo de la Chopera.

RECEPCIÓN DE LA CONFERENCIA

Este evento se celebrará el lunes 16 de junio, a partir las 21:00 h. en el Palacio de Cristal de la Arganzuela, situado en el Paseo de la Chopera, 10. Música, cóctels y canapés serán parte del entretenimiento en este excelente palacio.

EXHIBITOR RECEPTION

The Exhibitor Reception will take place on Tuesday 17th June, in the Exhibition Hall, hosted and sponsored by Hamburg Messe. Cocktails and canapés will be served and musical entertainment provided from 18h30.

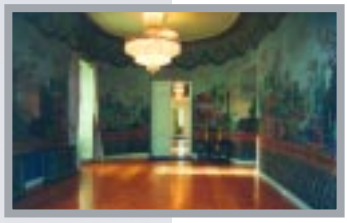
RECEPCIÓN DE LOS EXPOSITORES

La Recepción de los Expositores tendrá lugar el martes 17 de junio, a partir de las 18:30 h. en el hall de exposiciones, patrocinada por La Feria de Hamburgo (Hamburg Messe). Podrá disfrutar de bebidas, comida para picar y música.

CONFERENCE DINNER

The Conference Dinner will take place on Wednesday 18th June at the Palacio de la Quinta del Duque del Arco, on the Monte del Pardo. Free buses will be provided from hotels in the centre and near the venue. Dinner will start at 21h30.

Delegates wishing to attend must fill in the registration form accordingly.



CENA DE LA CONFERENCIA

La Cena de la Conferencia tendrá lugar el miércoles 18 de junio, a partir de las 21:30 h. en el Palacio de la Quinta del Duque del Arco, en el Monte del Pardo. Se dispondrá de servicios de autobuses desde diferentes hoteles.

Aquellos participantes que deseen acudir a la cena, deberán cumplimentar la correspondiente información en la Hoja de Registro de la Conferencia.

MEET EWEA

A "Meet EWEA" reception will be held at 18:30 on Wednesday 18th June, at the EWEA stand in the Conference venue. Participants wishing to attend this reception will have time to return to their hotels to get ready for the conference dinner at 21:30 that evening (see above).

CITA CON EWEA

La "Cita con EWEA" es una recepción que se celebrará a partir de las 18:30 h. del miércoles 18, en el stand de la EWEA en el Centro de Conferencias. Aquellas personas que deseen acudir a esta cita dispondrán de tiempo suficiente para volver a sus hoteles y prepararse para la Cena de la Conferencia (ver arriba).

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OTHER SPONSORS:

Conference programme

The conference programme contains the output of projects supported by both
DG TREN and DG Research
European Commission

Delegate bags

Ecotècnia, Spain

Coffee breaks

- Monday 16th, Tuesday 17th, Wednesday 18th June
  LM Glasfiber, Denmark
- Thursday, 19th June
  State Government of Victoria, Australia
  Sustainable Energy Authority Victoria, Australia

Exhibitor reception

- Tuesday 17th June

WindEnergy, Hamburg Messe, Germany

Badge ribbons

Shell WindEnergy

Official Carrier

Iberia, Spain

Conference reception Monday 16th June

COCKTAIL:
GE Wind Energy, USA

ENTERTAINMENT:
Terranova, Spain

Shuttle Bus

Izar, Spain

Electricity usage

Provision of wind generated electricity to cover the consumption of the exhibition hall on the opening day.
Electra Norte, Spain

Abstract Book

Enerfin, Spain

Wind power information

Continuous presentation of real time Spanish wind energy production figures
Red Electrica, Spain

Official Journal

Wind Energy Journal, UK

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Programme Chairman

Zervos A. President, EWEA, Belgium / NTUA, Greece

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Rubio I. Abstract collection and programme management

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Spyros	Voutsinas	National Technical University of Athens (NTUA)
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Rick	Watson	University College Dublin

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Postal Code / Código Postal . . . . . VAT / CIF . . . . .
Phone nr. (indicate country/city codes) / Teléfono (código de país y de ciudad) . . . . .
Fax nr. / Fax . . . . . E-mail address / e-mail . . . . .

HOTELS LIST / LISTA DE HOTELES (See general conditions in the back / Ver condiciones generales en el reverso)

HOTEL NAME & CATEGORY NOMBRE DEL HOTEL Y CATEGORÍA (See hotels' location at the back / Ver ubicación en el reverso)	Double room (2 persons) Rate per room and night Breakfast included Habitación doble (2 personas) Precio por habitación/día, desayuno incluído	Single room (1 person) Rate per room and night Breakfast included Habitación individual (1 persona) Precio por habitación/día, desayuno incluído
Sofitel Madrid Airport / 4* Sup	272 EUR	230 EUR
Novotel Campo de las Naciones / 4*	176 EUR	153 EUR
Novotel Madrid Puente de la Paz / 4*	171 EUR	148 EUR
Auditorium Madrid / 4* Sup.	213 EUR	162 EUR
Meliá Avenida de América / 4* Sup.	213 EUR	162 EUR
Castellana Inter-Continental / 4* Sup	361 EUR	308 EUR
NH Zurbano /3*	146 EUR	133 EUR
NH Alberto Aguilera /	147 EUR	134 EUR
Rafael Ventas / 3*	158 EUR	126 EUR
El Coloso / 4*	115 EUR	100 EUR
Best Western Hotel Cortezo / 3*	139 EUR	108 EUR

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2nd Hotel choice • 2ª elección de Hotel : . . . . .
3rd Hotel choice • 3ª elección de Hotel : . . . . .

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PAYMENT TERMS / CONDICIONES DE PAGO

Payment to be made to GRUPO PACIFICO by / El pago se realizará a GRUPO PACÍFICO a través de :

☐ Bank transfer to account number: 0075-1198-05-0600039143 at Banco Popular Español, Please, indicate as reference: EWEC and your complete name. Copy of the bank transfer added to this form is needed to confirm your hotel reservation.
Transferencia bancaria al nº de cuenta: 0075-1198-05-0600039143 del Banco Popular Español, indicando como referencia: EWEC y su nombre completo. Para confirmar su reserva de hotel deberá enviar una copia del comprobante de transferencia bancaria junto con la hoja de reserva de hotel.

Credit Card / Tarjeta de Crédito: ☐ VISA ☐ MasterCard/Eurocard ☐ American Express

Card number / Nº de tarjeta : . . . . . .
Expiration date / Fecha de vencimiento : . . . . . (month / year - mes / año)

Name as it appears on card / Nombre tal y como aparece en la tarjeta . . . . .
Cardholder signature / Firma del titular de la tarjeta . . . . .
Place and date of the request . . . . .
Fecha y lugar de la solicitud . . . . .

GENERAL CONDITIONS • CONDICIONES GENERALES

1. BOOKING AND PAYMENT/S

- Reservation will not be processed if form is incomplete.
- Reservation should be made only through the hotel reservation form. One form must be used per each room requested.
- Telephone requests are not allowed.
- GRUPO PACIFICO (GP) will not make any booking without the total payment (VAT 7% included). Payment must be made in Euros.
- After April 15th, the availability of the hotels cannot be guaranteed.
- Hotel reservations will be booked on a first-come first-served basis upon reception of the corresponding payment.
- Special allotments at the Hotels are available for the Congress dates (June 15-20, 2003), Previous days or late departure reservation are subject to hotel availability.
- Please, make only an unique application form/s to avoid double booking.
- Special needs cannot be guaranteed, however GP will do their best to honour all requests.

1. RESERVA Y PAGO/S

- Si los datos de la hoja de reserva son incompletos, la reserva no se procesará
- Las reservas solo se realizarán a través de las hojas de reserva. Se utilizará una hoja por cada habitación que se solicite.
- No se atenderán solicitudes telefónicas.
- GRUPO PACÍFICO (GP) no hará ninguna reserva si previamente no se ha realizado el pago total (IVA 7% incluído). Los pagos se realizarán en EUROS.
- La disponibilidad de plazas de hotel sólo se garantiza hasta el 15 de abril.
- Las reservas se realizarán de acuerdo al orden de llegada de las mismas y a la recepción del pago correspondiente.
- Para los días del congreso (15-20 de junio de 2003), se ha concertado con los hoteles reservas especiales. Las reservas en fechas anteriores y posteriores están sujetas a la disponibilidad del hotel.
- Por favor envíe una única hoja de reserva para evitar duplicidades
- Las necesidades especiales no se pueden garantizar, en cualquier caso GP hará todo lo posible por satisfacer todas las solicitudes.

Please, fill in and send this form to Grupo Pacifico:

Fax: +34 91 302 39 26

Ref: EWEC Congress

Avda. Burgos, 39 - 5º - 28036 Madrid, Spain

Tel: +34 91 383 3522 - www.pacifíco-meetings.com

Enviar esta hoja cumplimentada a :

Fax: +34 913 02 39 26

Grupo Pacífico (Ref: EWEC 2003)

Avda. Burgos, 39 - 5º - 28036 Madrid, España

Tel: +34 91 383 3522 - www.pacifico-meetings.com

2. CONFIRMATIONS

- Upon reception of the payment corresponding to the total reservation, GP will send you a written confirmation voucher. Please review all information for accuracy.
- If your hotel 1ST selection is not available at the time of booking, GP will confirm an available alternative, as indicated on the hotel reservation form.

2. CONFIRMACIONES

- A la recepción del pago correspondiente a la totalidad de la reserva, GP enviará, por escrito una confirmación de la misma. Por favor, compruebe que los datos son correctos.
- Si en el hotel seleccionado en primer lugar no hay habitaciones disponibles, GP le confirmará la reserva en el hotel con plazas disponibles, de acuerdo a lo indicado en la hoja de reserva.

3. CANCELLATIONS/NO-SHOWS/CHANGES

- Any change (name change, arrival/departure revision, etc.) or cancellation should be made in writing to GP prior to 15 March 2003 for a full refund.
- Any cancellation received between 16 March-15 May will result in loss of one night's deposit.
- Those who cancel, fail to show up, or shorten their stay from 16 May 2003 onward will be responsible for the full cost of their original reservation.
- In the case of no-show the hotel may cancel the room at 9.00 am of the following day.
- In any case refunds will be made after the congress celebration.

3. CANCELACIONES/CAMBIOS

- Para un reembolso total del importe, cualquier cambio (nombre, fechas de llegada/salida, etc..) o cancelación se deberá hacer, por escrito a GP, antes del 15 de marzo de 2003.
- Si las cancelaciones se realizan entre el 16 de marzo y el 15 de mayo se descontará, del reembolso, el importe de una noche.
- Las cancelaciones o reducciones de estancia que se comuniquen del 16 de mayo en adelante, no tendrán derecho a ningún reembolso. Aquellas personas que no se presenten en el hotel en la fecha reservada tampoco tendrán derecho a ningún reembolso.
- En caso de no presentarse en la fecha reservada, el hotel cancelará la reserva de la habitación a las 09:00 a.m. del día siguiente.
- En cualquier caso, los reembolsos se realizarán tras la celebración de la conferencia.

4. HOTELS' GEOGRAPHICAL LOCATION
(See map for more information)

- Sofitel Madrid Aeropuerto: No metro is needed (5 minutes walking)
- Novotel Campo de las Naciones: No metro is needed (5 minutes walking)
- Novotel Madrid Puente de la Paz: 40 minutes by metro
- Auditorium Madrid: There is no metro near. 10 minutes by car or taxi
- Meliá Avenida de América: There is no metro near. 5 minutes by car / taxi or 20 minutes walking
- Castellana Inter-Continental: 30 minutes by metro
- NH Zurbano: 30 minutes by metro
- NH Alberto Aguilera: 40 minutes by metro
- Rafael Ventas: aprox. 50 minutes by metro
- El Coloso: aprox. 50 minutes by metro
- Best Western Hotel Cortezo: 40 minutes by metro

4. LOCALIZACIÓN GEOGRÁFICA DE LOS HOTELES
(ver mapa para más información)

- Sofitel Madrid Aeropuerto: No es necesario el metro, (5 minutos a piè).
- Novotel Campo de las Naciones: No es necesario el metro, (5 minutos a piè).
- Novotel Madrid Puente de la Paz: 40 minutos en metro
- Auditorium Madrid: No hay metro cerca. 10 minutos en coche o taxi
- Meliá Avenida de América: No hay metro cerca. 5 minutos en coche / taxi o 20 minutos a pié.
- Castellana Inter-Continental: 30 minutos en metro
- NH Zurbano: 30 minutos en metro
- NH Alberto Aguilera: 40 minutos en metro
- Rafael Ventas: aprox. 50 minutos en metro
- El Coloso: aprox. 50 minutos en metro
- Best Western Hotel Cortezo: 40 minutos en metro

For any further information, please forward your questions to / Para más información:
Tel: +34 91 383 3522 - congresos@pacifico-madrid.com - Fax: +34-91-3023926

Map of Madrid showing hotels and conference venue (IFEMA)

Mapa de Madrid con indicación de hoteles y sede de la conferencia (IFEMA):

EWEC conference and exhibition is at the North Entrance of IFEMA Free bus from South to North takes 5 mins.

La conferencia y exposición EWEC tendrán lugar en la Entrada Norte de IFEMA. El trayecto de los autobuses gratuitos, desde la Entrada Sur a la Entrada Norte, es de 5 min.

REGISTRATION FORM • Fax Back: + 34 913 023926

For further information on registration and hotels: **Direct tel. + 34 91 383 3522**

Grupo Pacifico - Avda. De Burgos, 39 • 28036 Madrid - Spain • **Tel.: +34 91 383 6000** • **E-Mail: congresos@pacifico-madrid.com**

DELEGATE

Last Name	First Name	Title
Company		VAT No.
Street		
Postal Code	City	Country
Phone	Fax	E-mail

DELEGATE REGISTRATION FEES

Member of EWEA or APPA					☐ € 700,-
Non Member					☐ € 900,-
One day ticket (Member / Non Member)	☐16th	☐17th	☐18th	☐19th	☐ € 350,-
Student					☐ € 200,-
One day ticket (Student)	☐16th	☐17th	☐18th	☐19th	☐ € 100,-
Offshore professional course (see page 12 or www.eurec.be)					☐ €1250,-
Conference Dinner (inc. VAT 7%)					☐ € 100,-

To visit the exhibition only, simply register on site (€ 10,-)

Prices are per person. Please submit one form per delegate. Full-time students only, max. age: 30 years - copy of valid students I.D. Card has to be provided.

Fee includes :

1. VAT at 7%
2. Abstract Book and Exhibition Guide
3. Conference Proceedings *(except for one day tickets)*
4. 2 Coffee breaks per day
5. Entrance to exhibition hall (€ 10)
6. Conference and Exhibitor receptions

FREE TECHNICAL VISITS - FRIDAY 20TH JUNE

- ☐ Gamesa Windfarm at Toledo (allow half day) 28 x 850kW turbines
- ☐ GE Wind prototype wind turbine at Barrax (allow full day) 3.6 MW offshore prototype turbine
- ☐ Gamesa factory at Cuenca (allow half day) Root joint manufacturing facility
- ☐ GE Wind factory at Noblejas (allow half day) 1.5MW turbine manufacturing facility
- ☐ Both Gamesa visits (allow full day)
- ☐ Both GE Wind visits (allow full day)

DELEGATE CANCELLATION / ALTERATION POLICIES

All cancellations/alterations must be in writing by letter, fax or e-mail to Grupo Pacifico.

Before March 15th, 2003:	Full refund minus € 30,- handling fee
Between March 16th and May 15th, 2003:	50% refund
After May 16th, 2003:	No refund
Any name change or other alterations:	€ 20,-.

PAYMENT *All bank transfers must be made before 26 May - Credit card payments must be made before 6 June or at on site registration*

BY CREDIT CARD: ☐American Express ☐Visa ☐Euro-/Mastercard ☐Diners

I authorise GRUPO PACIFICO to charge the indicated sum/s to:

Credit Card Nr: _ _ _ _ / _ _ _ _ / _ _ _ _ / _ _ _ _ Expiry Date: _ _ / _ _ _ _ Total € :

Holder

BY BANK TRANSFER:

Bank name: BANCO POPULAR Account number: 0075-1198-05-0600039143 Ref: 2003EWEC SWIFT Code: POPUESMM

Please note that banking fees have to be settled by the remitter and you MUST mention your name, registration number and the purpose of your payment, so that the money can be assigned to your account. A copy of the bank's confirmation must accompany the Registration Form.

LIABILITY

Grupo Pacifico is working as an agent on behalf of EWEA. Neither Grupo Pacifico nor EWEA can be held responsible for any loss, injury or damage to any property, whatever the cause may be. Liability of persons and enterprises providing means of transportation or other services, however, remains unaffected. The customer takes part in all tours and trips at his own risk. Only written arrangements are binding. Sole venue is Madrid. We ask you to authorise Grupo Pacifico by signature to use all registration data given by this form for a computerised handling of this conference.

Signature: **Date:**

Join EWEA or APPA to benefit from € 200 discount - visit www.ewea.org

European Wind Energy Association

EWEA is the international voice of the wind industry, established for 20 years.
It is the world's largest renewable energy association. EWEA members include manufacturers representing 98% of the world market, research centres, national associations, developers, owners, utilities, and financiers.
EWEA is a founding member of EREC (the European Renewable Energy Council), which includes all principal European renewable energy industry and research associations.

EWEA

HOJA DE INSCRIPCIÓN • Enviar por fax: + 34 91 302 3926

Para más información sobre la inscripción y los hoteles, **diríjase a: + 34 91 383 3522**

Grupo Pacífico - Avda. de Burgos, 39 • 28036 Madrid - España • **Tel.: +34 91 383 6000** • **e-mail: congresos@pacifico-madrid.com**

ASISTENTE

Apellidos	Nombre	Cargo
Empresa		CIF
Dirección		
Código postal	Ciudad	País
Teléfono	Fax	e-mail

CUOTAS DE INSCRIPCIÓN

Miembro de la EWEA o de APPA					☐ 700.- €
No miembro					☐ 900.- €
Entrada para 1 día (miembro / no miembro)	☐16	☐17	☐18	☐19	☐ 350.- €
Estudiante					☐ 200.- €
Entrada para 1 día (estudiante)	☐16	☐17	☐18	☐19	☐ 100.- €
Curso Profesional Offshore (ver página 12 y www.eurec.be)					☐ 1250.- €
Cena de la conferencia (inc. 7% IVA)					☐ 100.- €

Si desea visitar exclusivamente la exposición, regístrese in situ (10,- €)

Los precios son por persona. Envíe una hoja de inscripción por cada participante. Sólo para estudiantes a tiempo completo. Edad máxima: 30 años. Es preciso presentar copia del carnet de estudiante.

En el precio se incluye lo siguiente:

1. IVA del 7%
2. Libro de resúmenes y guía de la exposición
3. Libro de ponencias (excepto para las entradas de un solo día)
4. Café en dos pausas diarias
5. Entrada a la exposición (10,- €)
6. Recepciones: de la Conferencia y de la Exposición

VISITAS TÉCNICAS - VIERNES 20 DE JUNIO (GRATUITA)

- ☐ Parque Eólico de Gamesa en Toledo (medio día) 28 turbinas de 850kW
- ☐ Prototipo de aerogenerador de GE Wind en Barrax (todo el día). Prototipo de turbina offshore de 3.6 MW
- ☐ Fábrica de Gamesa en Cuenca (medio día) Planta de fabricación de raíces de pala
- ☐ Fábrica de GE en Noblejas (medio día). Planta de fabricación de aerogeneradores
- ☐ Ambas visitas de Gamesa (todo el día)
- ☐ Ambas visitas de GE Wind (todo el día)

ANULACIÓN Y MODIFICACIÓN DE LA INSCRIPCIÓN

Todas las anulaciones o modificaciones deben realizarse por escrito mediante carta, fax o e-mail dirigido al Grupo Pacífico.

Antes del 15 de marzo de 2003:	Devolución completa menos 30 € en concepto de gastos de gestión
Entre el 16 de marzo y el 15 de mayo de 2003:	Devolución del 50%
Después del 16 de mayo de 2003:	Sin derecho a devolución

Todos los cambios de nombre de participante o cualquier otra modificación ocasionarán un gasto adicional de 20 €.

PAGO (Los pagos con tarjeta de crédito deben hacerse antes del 6 de junio o en el registro *in situ*)

MEDIANTE TARJETA DE CRÉDITO: ☐American Express ☐Visa ☐Euro-/Mastercard ☐Diners

Autorizo a GRUPO PACÍFICO a cargar la cantidad indicada en la:

Tarjeta de crédito nº _____ / _____ /_____ /_____ Fecha de caducidad __ / _____ Total €:

Titular

MEDIANTE TRANSFERENCIA BANCARIA:

Nombre del banco: BANCO POPULAR La transferencia bancaria debe ser enviada antes del 26 de mayo

Número de cuenta: 0075-1198-05-0600039143 Ref.: 2003EWEC Código SWIFT: POPUESMM

Las comisiones bancarias son a cuenta del remitente. NO OLVIDE mencionar su nombre, número de inscripción y el objeto del pago, para que pueda asignarse adecuadamente a su favor. Debe adjuntar a la ficha de inscripción una copia del comprobante de la transferencia..

RESPONSABILIDAD

Grupo Pacifico opera como agente en nombre de la Asociación EWEA. Ni el Grupo Pacifico ni EWEA son responsables de las pérdidas, los daños o perjuicios ocasionados a cualquier clase de bienes, independientemente de su causa. Sin embargo, ello no altera la responsabilidad de las personas y las empresas que presten los medios de transporte u otros servicios. Las personas que participen en viajes o visitas turísticas lo harán por su propia cuenta y riesgo. Sólo son vinculantes los acuerdos realizados por escrito. El lugar exclusivo del encuentro es Madrid. Le rogamos que autorice con su firma al Grupo Pacífico a que utilice todos los datos de inscripción que aparecen en esta hoja para el tratamiento informático de esta conferencia.

Firma: **Fecha:**

Hágase socio de EWEA o APPA y obtendrá una reducción de 200€ - visite www.ewea.org

Renewable Energy House
26 Rue du Trône
Brussels B-1000 Belgium

Tel: +32 2546 1940

Email: info@ewea.org
Web: www.ewea.org

La Asociación Europea de Energía Eólica

La EWEA es, con una existencia de 20 años, la voz internacional de la energía eólica y la mayor asociación de energías renovables del mundo.

Entre los miembros de EWEA se incluye una representación del 90% de los fabricantes del mercado mundial, centros de investigación, asociaciones nacionales, promotores, propietarios, empresas eléctricas y entidades financieras.

EWEA es miembro fundador del Consejo Europeo de Energías Renovables (EREC), que acoge a la principal industria europea de las energías renovables y asociaciones de investigación.

A-Z Information • A-Z Información

For all enquiries, please contact the conference managers, Grupo Pacifico:

Para cualquier información, contacte con Grupo Pacífico: Tel: +34 91 383 3522 • Fax: +34 91 302 3926 Avda. Burgos, 39 – 5º • 28036 Madrid, Spain / España • congresos@pacifico-madrid.com • www.pacifico-meetings.com

VENUE: The Juan Carlos I Exhibition and Conference centre is one of the most modern and best equipped in Europe. It is located in Campo de las Naciones, to the north of the city, 3km from the airport. See www.ifema.es for more details.

LOCALIZACIÓN: El Palacio de Exposiciones y Congresos Juan Carlos I es uno de los más modernos y mejor equipados de Europa. Está ubicado en el Campo de las Naciones, al norte de la ciudad y a 3km. del aeropuerto internacional de Barajas. Visite la página de IFEMA www.ifema.es para más información.

ARRIVAL: Participants must arrive at the North Entrance of the venue. The venue is very large, and 2003 EWEC will take place at the north end of the venue, while another event takes place at the south end. Buses will be available to take participants arriving at the South Entrance to the North Entrance, every 5 minutes.

- By Taxi: stress that you wish to go to the North Entrance. Some drivers will know it as the "Feria de Madrid".
- By Metro: the correct metro station is Campo de las Naciones (4 mins. from airport). On exiting the station, you will find yourself near the South Entrance of the complex. Here you will find free buses leaving every 5 mins. for the North Entrance.
- By Car: Parking is available at the North Entrance. See the map of the complex in this programme.

LLEGADA: Los participantes deben acudir a la entrada Norte del centro. El Parque Ferial ocupa una larga extensión. 2003 EWEC tendrá lugar en la zona norte del mismo, al mismo tiempo que se desarrollará otro evento en la parte sur. IFEMA provee una serie de autobuses gratuitos que conectan las entradas Norte y Sur cada 5 minutos.

- Taxi: recalque al taxista que usted debe ir a la entrada Norte. Tenga en cuenta que algunos conductores conocen el lugar como Feria de Madrid.
- Metro: la estación de metro es Campo de las Naciones (4 min. desde el aeropuerto). Una vez en la estación, usted se encontrará junto a la entrada Sur del complejo. Allí encontrará, en la parte derecha, los autobuses de IFEMA con dirección a la entrada Norte. Recuerde, tiene un autobús cada 5 minutos.
- Coche: Tiene disponibles aparcamientos junto a la entrada Norte. Vea en el mapa adjunto la localización de los mismos.

ACCOMODATION: Please see the hotel accommodation form in this programme. This is also available at www.pacifico-meetings.com/ewec2003/index.html For all enquiries relating to accommodation, please contact the conference managers, Grupo Pacifico. Please note that after April 15th, the availability of hotels cannot be guaranteed.

ALOJAMIENTO: Vea la hoja de registro del hotel adjunta a este programa. También la encontrará en www.ewea.org. Para cualquier información referente al alojamiento, por favor, póngase en contacto con Grupo Pacífico, encargado de la gestión del evento. Tenga en cuenta que la disponibilidad en los hoteles no está garantizada a partir del 15 de abril.

CATERING: Following each morning and afternoon session, coffee and tea will be served in the exhibition hall. Lunch is available in the Exhibition Hall, and in cafés throughout the complex.

CATERING: En cada descanso de las sesiones de la Conferencia se servirá café y té en el hall de exposiciones. Se podrá comer en el mismo hall numero 8 así como en los cafés y restaurantes que existen a lo largo del complejo.

CONFERENCE DINNER: The Conference Dinner will take place on Wednesday 18th June at the Palacio de la Quinta del Duque del Arco, on the Monte del Pardo. Free buses will be provided from selected hotels in the centre and near the venue.
Dinner will start at 21h30.

Delegates wishing to attend must fill in the registration form accordingly.

CENA DE LA CONFERENCIA: La Cena de la Conferencia tendrá lugar el día miércoles 18, a partir de las 21:30 h. en el Palacio de la Quinta del Duque del Arco, en el Monte del Pardo. Se proveerá de autobuses desde diferentes hoteles, tanto en el centro de la ciudad como cerca del IFEMA.

Aquellos participantes que deseen acudir, deben rellenar la correspondiente información en la Hoja de Registro de la Conferencia.

CONFERENCE MATERIALS: All participants will receive an Abstracts Book, Exhibition Guide, Programme, and other documentation in a conference bag, on registration.

MATERIAL DE LA CONFERENCIA: Todos los participantes recibirán la siguiente documentación: Libro de resúmenes, Guía de la Exposición, Programa y material adicional en la bolsa de la Conferencia (en el momento de registro).

CONFERENCE RECEPTION: The Conference Reception will take place on Monday 16th June, at the Palacio de Cristal de la Arganzuela. Cocktails and canapés served from 21h00. Access at No.10 Paseo de la Chopera, metro station - Legazpi (lines 3 & 6).

RECEPCIÓN DE LA CONFERENCIA: Dicho evento se celebrará el día lunes 16, desde las 21:00 h. en el Palacio de Cristal de la Arganzuela, situado en el Paseo de la Chopera, 10. La mejor forma de acudir es en taxi o metro, cuya estación es "Legazpi" (líneas 3 ó 6)

EMERGENCIES: Police, Fire Dept.,
Ambulance service: 112

EMERGENCIAS: En el caso de que necesitase los servicios de Policía, Bomberos o ambulancias, llame al número: 112

EXHIBITOR RECEPTION: The Exhibitor Reception will take place on Tuesday 17th June, from 18:30, in the Exhibition Hall, hosted by Hamburg Messe. Cocktails and canapes will be served and musical entertainment provided.

RECEPCIÓN DE LOS EXPOSITORES: La Recepción de los Expositores tendrá lugar el martes 17, a partir de las 18:30 h. en el hall de exposiciones, patrocinado por Hamburg Messe. Podrá disfrutar de bebidas, comida para picar y música.

EWEA: A "Meet EWEA" reception will be held from 18:30 on Wednesday 18th June, at the EWEA stand in the conference venue. Participants wishing to attend this reception will have time to return to their hotels to get ready for the conference dinner at 21:30 that evening.

Visit our website up to the event www.ewea.org or contact us on info@ewea.org +32 2546 1940. Please note that any enquiries relating to accommodation, registration and the exhibition should be addressed to Grupo Pacifico.

EWEA: La "Cita con EWEA" es una recepción que se celebrará a partir de las 18:30 h. del miércoles 18, en el stand de EWEA en el Centro de Conferencias. Aquellas personas que deseen acudir a esta cita dispondrán de tiempo suficiente para volver a sus hoteles y prepararse para la Cena de la Conferencia, prevista para las 21:30 de la noche.

Visite nuestra página www.ewea.org o contacte con nosotros en info@ewea.org o en el teléfono +32 2546 1940. Por favor, cualquier pregunta sobre el alojamiento, registros o exposición debe ser dirigida a Grupo Pacífico.

MADRID: An excellent metro system connects Barajas Airport to Campo de las Naciones (5mins), and to the town centre (12mins). Please see the following websites for maps and information on this vibrant and exciting city.

Madrid information: **www.aboutmadrid.com**
www.timeout.com/madrid/

Maps & metro maps of Madrid:
ww.softguides.com/madrid_guide/maps/

MADRID: Una excelente red de metro conecta el Aeropuerto de Barajas con el Campo de las Naciones (5 min.) y con el centro de la ciudad (12 min.). Vea en las siguientes direcciones información sobre esta interesante ciudad.

Información sobre Madrid: **www.aboutmadrid.com**
www.timeout.com/madrid/

Mapas de Madrid y del metro:
www.softguides.com/madrid_guide/maps/

Mapa del metro de Madrid:
www.softguides.com/madrid_guide/maps/metro_map.html

MONEY: The currency in Spain is the Euro. There are cash dispensers located at the venue.

MONEDA: La moneda oficial en España es el Euro. En IFEMA existen cajeros automáticos y bancos.

POSTER PRESENTATIONS: Poster presentations may be mounted on the boards provided from 12h00 on Sunday 15th June. They must be mounted in the areas provided, on the board designated for each. There will be attendants available to assist, with fixing/mounting materials. Presenters are requested to have their posters mounted before the start of the opening session at 10:00, Monday 16th June.

PRESENTACIONES DE PÓSTERS: Se expondrán en paneles que estarán listos desde las 9:00 h. de la mañana del sábado 14. Deben ser colocados en los lugares que se han asignado para cada trabajo. La persona que deba colocar el poster dispondrá de asistencia y de los materiales necesarios para ello. Es deber de los presentadores de cada trabajo tener sus posters colocados en dichos paneles antes del comienzo de la Sesión de Apertura, a las 10:00 h. de la mañana del lunes 16.

PROCEEDINGS: Proceedings will be dispatched to all participants following the conference, in CD-Rom format.

LIBROS DE PONENCIAS: Serán entregados a todos los participantes después de la Conferencia, en formato CD.

REGISTRATION: Please see the registration form in this programme. For all related enquiries, please contact Grupo Pacifico. Participants may also register via Internet at www.ewea.org Please note that registrations taking place after May 30th may not be made by bank transfer.

Onsite registration will take place at the North Entrance, and will commence at 15:00 on Sunday 15th and at 8:00 am each day of the event, from 16th to 19th June. Badges will be given to all participants on registration. Participants will not be admitted to the conference or exhibition venues without their badges.

REGISTRO: Vea la Hoja de Registro incluida en este Programa. Para cualquier pregunta contacte con Grupo Pacífico. También puede registrarse a través de internet en www.pacifico-meetings.com/ewec2003/index.html. Tenga en cuenta que los registros que se realicen después del 30 de mayo no se podrán pagar a través de transferencia bancaria.

Los registros in situ se realizarán en la entrada Norte, comenzando a las 15:00 h. del domingo 15, y desde las 8:00 h. durante los días de celebración, del 16 al 19 de junio. Las acreditaciones serán entregadas a todos los participantes en el momento de registro en dicho lugar. No se admitirá la entrada a la Conferencia o a la Exposición de ningún participante que no disponga de la correspondiente acreditación.

SIMULTANEOUS TRANSLATION: Simultaneous translation between English and Spanish will be provided in the opening and closing sessions, as well as in business sessions, and in selected workshops.

TRADUCCIÓN SIMULTÁNEA: Se dispondrá de traducción simultánea entre inglés y español en las sesiones de apertura y clausura, las sesiones sobre aspectos económicos y en algunos grupos de trabajo.

* Monday 16 • Lunes 16 - A: POLITICS + INDUSTRY DRIVERS • POLÍTICAS + CLAVES DE LA INDUSTRIA

Time Horario	Session Code Código de sesión	
10:00	AP1	Opening Session / Sesión de Apertura
12:30		Lunch + Press Conference + Official Exhibition Opening Comida + Rueda de Prensa + Apertura Oficial de la Exposición
15:00	AP2	Key Industry Drivers / Líneas Maestras de la Industria
16:30		Coffee Break / Descanso - Café
17:00	AP3	Growth and Grids: Panel Discusión / Crecimiento y Redes: Mesa redonda
18:30		End / Fin
21:00		Conference Reception / Recepción de la Conferencia

Tuesday 17 • Martes 17 - B: POLICY, MARKETS + FINANCE • POLÍTICAS, MERCADOS + FINANCIACIÓN

Time Horario	* Business / Aspectos Económicos	Technical 1 Sesión Técnica 1	Technical 2 Sesión Técnica 2	Workshops Grupos de Trabajo
9:30	BB1 Finance / Financiación	BT1.1 Forecasting wind + short term prediction	BT1.2 Loads + safety	
11:00	Coffee Break / Descanso - Café			
11:45	BB2 EU and national policies / Políticas Nacionales y Europeas	BT2.1 Grid integration	BT2.2 Aerodynamics + aeroelasticity	
13:30	Lunch / Comida			
15:00	BB3 Poster Session	BT3 Poster Session		BW3 * BW3.1: Operation + maintenance BW3.2: Short term wind prediction BW3.3: Policy + support mechanisms BW3.4: Control + grids
16:30	Coffee Break / Descanso - Café			
17:00	BB4 Liberalised electricity markets: Panel discussion / Mercados eléctricos liberalizados: Mesa redonda	BT4.1 Electrical design + control	BT4.2 Development of measurement methods	BW4 BW4.1: Insurance + risk reduction BW4.2: Aerodynamics + aeroelasticity
18:30	Exhibitor Reception / Recepción de los Expositores			

Wednesday 18 • Miércoles 18 - C: INDUSTRY + TECHNOLOGY: THE FUTURE • INDUSTRIA + TECNOLOGÍA: EL FUTURO

Time Horario	* Business / Aspectos Económicos	Technical Sesión Técnica	Forum Foro	Workshops Grupos de Trabajo
9:30	CB1 Offshore developments / Desarrollos Offshore	CT1 Wind resources	CF1 Industry vision	
11:00	Coffee Break / Descanso - Café			
11:45	CB2 Market perspectives and constraints / Perspectivas de Mercado y restricciones	CT2 Design wind conditions	CF2 Industry vision: Panel Discussion	
13:30	Lunch / Comida			
15:00			CF3 Thematic Network: Wind energy R+D strategy	CW3 CW3.1: Offshore: Technology trends CW3.2: Wind resources CW3.3: Certification +standards * CW3.4: Costs+ prices of wind electricity
16:30	Coffee Break / Descanso - Café			
17:00	CB4 New commercial wind turbines / Nuevos aerogeneradores industriales	CT4 Autonomous, hybrid + desalination systems		CW4 CW4.1: Project Finance CW4.2: Measurements CW4.3: Innovative designs
18:30	Meet EWEA reception / Recepción de EWEA			
21:30	Conference Dinner / Cena de la Conferencia			

Thursday 19 • Jueves 19 - D: GLOBAL + ENVIRONMENTAL PERSPECTIVES • PERSPECTIVAS GLOBALES Y MEDIOAMBIENTALES

Time Horario	* Business / Aspectos Económicos	Technical Sesión Técnica	Forum Foro	Workshops Grupos de Trabajo
9:30	DB1 Wind Power in society / La Energía Eólica en la Sociedad	DT1 Large wind turbine design	DF1 Kyoto mechanisms	DW1 Opportunities in Australia
11:00	Coffee Break / Descanso - Café			
11:45	DB2 Large scale wind penetration + storage / Penetración eólica a gran escala + almacenaje	DT2 Innovative offshore design	DF2 World Bank, IFC + Global Environment Facility	
13:30	Lunch / Comida			
15:00	DP3 * Future Perspectives / Perspectivas de futuro			
16:30	DP4 * Closing Session / Sesión de Clausura			
17:30	END / FIN			

* Translation english/spanish/english
* Traduccion inglés/español/inglés

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