ewec 2007 MILAN

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WIND IS POWER

25 YEARS POWERING CHANGE

Conference Programme

Milano Convention Centre, Milan, Italy

7-10 May 2007

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Supporting Organisations

European Commission

Intelligent Energy Europe

Associazione Nazionale Energia del Vento

Eolica Expo Mediterranean

Associazione Produttori Energia da Fonti Rinnovabili

Global Wind Energy Council

European Academy of Wind Energy

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About the event

Why attend?

- **Gain** first hand knowledge and experience from industry leaders, decision makers and the research community
- **Benefit** from unique and unrivalled networking opportunities
- **Obtain** insight into, and understanding of the key issues
- **Develop** strategies that will yield a competitive advantage

What will you discover?

- New market opportunities and corporate strategies
- Detailed studies on the economics and grid integration of wind energy
- Latest technologies and trends
- National and European policy & regulatory frameworks
- Successful projects, case studies and strategies

NETWORKING

All participants will benefit from 4 days of intensive networking, new business development and information exchange. **You will meet representatives from across the wind and electricity sectors** (manufacturers, component suppliers, research institutes, national wind and renewables associations, developers, electricity providers, finance and insurance companies and consultants).

Conference

Over 200 presenters from the leading companies and institutions will speak in 40 separate business, technical and workshop sessions, and there will be over 300 visual presentations and 9 parallel workshops from the world's leading experts.

Italian translation will be available for all Plenary sessions and the entire Business and Policy track.
Traduzione in italiano sara` disponibile per tutte le sessioni plenarie e per le sessioni "Business and Policy".

For an updated programme visit www.ewec2007.info

Exhibition & Venue

visit www.ewec2007.info for the latest floor plans, exhibitors list and booking forms

Exhibition visitor entrance fee: €40/day (includes all coffee breaks, lunch and exhibition catalogue but no access to conference sessions). Online exhibition visitor registration will be open from the end of February 2007. The exhibition and conference are located next to each other. All coffee breaks and lunches are held in the exhibition halls, facilitating a fully integrated event with unrivalled networking opportunities. Over 90% of the available exhibition space has already been sold.
Confirmed exhibitors include:

A2SEA, ABB, Airtricity, AVANTI, Clipper Windpower, ecotècnia, ENERCON, Gamesa, Garrad Hassan, GE Energy, GL, Hansen Transmissions, LM Glasfiber, NORDEX, NRG Systems, PAUWELS 60, RES, REpower, SMULDERS, SUZLON, SIEMENS, Vestas, WPD

and many more…

Exposure: Showcase your latest products and services to the large number of professional visitors.
Credibility: Position your company at the heart of the international wind industry.
For further information or to book a stand contact: Ms. Silke Schlinnertz exhibition@ewec.info or +32 2 546 1980.
www.ewec2007.info

Chairman's message

Powering change towards a new energy future

Wind energy will be the leading technology in transforming the global energy supply structure towards a truly sustainable energy future based on unlimited, nonpolluting and competitive renewable technologies.

The need for urgent action is being hammered home by daily front page headlines highlighting the reality of the looming energy and climate crisis: "Stern action needed on climate change to avoid overwhelming economic consequences"; "Russian oil and gas supply disruptions threaten relations".

The European energy story is at a crossroads. Key decisions need to be taken now that will have an enormous impact on our energy future. No action: continue down the same route, accepting increasing costs of energy for consumers (this is more an issue of the grid), increasing geo-political risk, energy dependence, pollution and climate change damage. Take action: implement an effective roadmap for a new energy future with a strong focus on renewable energy, leading to a truly secure, sustainable, indigenous and competitive energy supply at predictable low cost.

EWEC 2007 is the ideal platform to present and discuss wind's role in the future energy mix

Arriving from all corners of Europe, wind energy actors will meet in May to identify the actions required to re-shape the European energy mix and discuss the role that wind energy can play. The conference will showcase to decision makers and key industry figures the two options detailed above: Action or No Action, and conclude with a concrete 'call for actions', detailing the necessary roadmap to a new energy future, asking for immediate actions.

The European Wind Energy Conference will analyse and debate the steps required for meeting a large part of European electricity needs by wind power. These include stable political frameworks, upgrading the existing power infrastructure to incorporate wind energy, taking steps to continue cost reductions, increasing both, on- and offshore wind production and intensifying research, innovation and technological progress in the wind sector. The conference will also discuss ways to lighten the legislative barriers and increase public awareness.

EWEC 2007 is the must attend "Annual General Meeting" for all wind energy professionals

The 2007 event will bring together over 3000 key players from the wind and electricity sectors for 4 days of intensive networking, new business development and information exchange.

The conference programme this year includes over 500 confirmed oral and poster presentations and 8 parallel workshops on all aspects of the wind and electricity sectors. The 40 sessions cover a huge range of topics, providing relevant and up to date information from the world's leading experts.

A parallel Exhibition with over 200 of the leading wind energy companies is the perfect place to examine the technologies, hardware and services that keep wind energy moving.

EWEA celebrates 25 years powering change

The founding objectives of the association, written 25 years ago: "Raise the level of cooperation between Europe's wind power organisations and spur international awareness of the potential of wind energy" are still at the core of EWEA's activities. However, the sector has come a long way in a quarter of century – Wind power is now mainstream.

The annual EWEC event plays a crucial role in reinforcing wind's position within the energy mix of tomorrow and further secures EWEA's position as the voice of the industry for both the business and research sectors.

Finally, I would like to thank all the sponsors, the European Commission, the International Energy Agency, Italian wind and renewables associations (ANEV and APER) and the Expo Eolica event for their support and the European Academy of Wind Energy for the development of the comprehensive scientific programme.

I look forward to welcoming you in Milan at Europe's premier wind energy event.

Peter Ahmels, Conference Chair / President of BWE (German Wind Energy Association), Germany

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MONDAY / 7 May 2007

08:00-10:00 / Registration, Welcome Coffee, Poster Session

10:00-12:00 / Opening Session

PLENARY TRACK / CODE: AP1
AUDITORIUM

Simultaneous translation into English and Italian - Traduzione simultanea in inglese e in italiano.

Political messages will be presented by key decision makers from around the world.

Chair:

- ***Peter Ahmels*** – Conference Chair
  President of BWE (German Wind Energy Association), Germany

The following speakers have been invited:

- ***Alfonso Pecoraro Scanio***
  Minister of Environment, Italy

- ***Sigmar Gabriel***
  Minister for Environment, Conservation and Nuclear Safety, Germany

- ***António Castro Guerra***
  Secretary of State to the Minister for Industry and Innovation, Portugal

- ***Mike Rann***
  MP, Premier of South Australia, Australia

- ***Mechtild Rothe***
  Vice-President of the European Parliament

- ***Fabrizio Barbaso***
  Deputy Director General, European Commission

- ***Arthouros Zervos***
  President, European Wind Energy Association (EWEA)

12:00-14:00 / **Press Conference and Official Exhibition Opening & Buffet Lunch – Exhibition Halls**

14:00-15:30 / Renewable Energy Roadmap

PLENARY TRACK / CODE: AP2
AUDITORIUM

Translated into Italian/Tradotto in italiano.

Moderator: ***Brandon Halligan***, Chairman of the Institute of European Affairs, Ireland

Panel discussion with short introduction from each speaker.

Short introductory statements followed by discussion on the following issues:

- How will the proposed target of 20% renewables by 2020 be met?
- How best to translate this into policies at Member State level?
- How important is a sectoral target for the future of renewable electricity?
- How can the Priority Interconnection Plan and grid reinforcement facilitate large scale wind power?
- How will the roadmap contribute to the general energy objectives of the EU (diversification of the energy mix, security of supply, environmental protection, competitiveness, etc.)?
- How will the roadmap contribute to meeting Kyoto objectives before and after 2012?

The following speakers have been invited:

- ***Christian Kjaer***, CEO, European Wind Energy Association (EWEA), Belgium
- ***Humberto Delgado Ubach Chaves Rosa***, Secretary of State, Ministry of Environment, Portugal
- ***Gianni Silvestrini***, Advisor, Ministry of Industry , Italy
- ***Urban Rid***, Director General, Federal Ministry for the Environment, Germany
- ***Hans Van Steen***, Head of Unit, DG TREN, European Commission, Portugal
- ***Paul Bulteel***, General Secretary, EURELECTRIC, Belgium

15:30-16:00 / **Coffee Break – Exhibition Halls**

16:00-17:30 / Changing structure of the wind industry

PLENARY TRACK / CODE: AP3
AUDITORIUM

Translated into Italian/Tradotto in italiano.

Moderator: ***Fiona Harvey*** (tbc), Environmental Editor, The Financial Times, United Kingdom

Panel discussion with short introduction from each speaker.

High level representatives from the wind power industry will debate around the following questions:

- What is the most significant change to the industry structure over the last few years?
- What further changes to the structure and major players in the industry will take place in the coming years?
- Why has wind energy become an attractive business option from the point of view of a manufacturer, utility and financier?
- How does wind fit into the wider energy context and future supply mix?

The following speakers have been invited:

- ***Victor R. Abate***, Vice President, Power Generation Technology, GE Energy, United States of America
- ***Andreas Nauen***, Head of the Wind Power Division, Siemens, Germany
- ***Xavier Viteri***, General Manager, Iberdrola Renewable Energies, Spain
- ***David Jones***, Chief Executive, Renewable Energy Group, Allianz Specialised Investments Limited, United Kingdom
- ***Lars Josefsson***, President and CEO, Vattenfall AB, Sweden
- ***Per Holmgaard***, Senior Vice President, DONG ENERGY, Denmark

17:00 / **Beer Reception – Exhibition Halls**

19:00 / **Conference Reception**

TUESDAY / 8 May 2007

08:00-09:00 / **Registration, Welcome Coffee, Poster Session**

09:00-10:30 / Policies and programmes

BUSINESS & POLICY TRACK / CODE: BB1

Translated into Italian/Tradotto in italiano.

Chairs: ***Peter C. Brun***, Vice President, Governmental Relations, Vestas Wind Systems A/S, Denmark
José Donoso, Development Director, Gamesa Energía, Spain

Representatives from the European Commission, UK, Spain, Germany and Italy will present various strategies to promote wind energy through national and European policies.

SPEAKERS:

- INTELLIGENT ENERGY EUROPE - PAVING THE WAY FOR WIND ENERGY
  Patrick Lambert, Intelligent Energy Executive Agency, Belgium
- ***Beatriz Yordi***, DG TREN, European Commission
- ***Jaume Margarit***, National Energy Agency (IDAE), Spain
- WIND POWER IN THE UK UNDER A BANDED RENEWABLES OBLIGATION
  Gordon Edge, British Wind Energy Association (BWEA), United Kingdom
- STATUS OF THE GERMAN WIND ENERGY MARKET AND PROSPECTS FOR THE FUTURE
  Claudia Grotz, German Wind Energy Association (BWE), Germany
- ***Luciano Pirazzi***, Italian National Agency for New Technologies, Energy and the Environment (ENEA), Italy

09:00-10:30 / Aerodynamics and innovation in turbine design

SCIENTIFIC TRACK / CODE: BS1

Chairs: ***Niels Soerensen***, Risø National Laboratory, Denmark
Helge Madsen, Risø National Laboratory, Denmark

Nearly a decade has passed since CFD was first introduced in wind turbines rotor aerodynamics analysis. This was a major step forward in understanding the complicated flow physics of rotating blades. Since then CFD analysis is constantly improving in terms of physical modeling (turbulence models) and computational accuracy (mesh size) and efficiency. Starting with isolated rotors at that time, full wind turbine computations are possible today.

CFD is also proving valuable in analyzing unsteady flows due to time changing inflow conditions or shape deformations. This is essential for studying passive or active flow control strategies as an option for load alleviation. Recent advances in CFD rotor aerodynamics and adaptive trailing edge control are presented in this session.

SPEAKERS:

- WIND TURBINE AERODYNAMICS USING AN INCOMPRESSIBLE OVERSET GRID METHOD
  Frederik Zahle, Risø National Laboratory, Denmark
- ROTOR BLADE SECTIONAL PERFORMANCES IN YAWED INFLOW CONDITION
  Takao Maeda, Mie University, Japan
- LOAD ALLEVIATION THROUGH ADAPTIVE TRAILING EDGE CONTROL SURFACES: ADAPWING OVERVIEW
  Thomas Buhl, Risø National Laboratory, Denmark

09:00-10:30 / Wind resources and site characterisation 1

TECHNICAL TRACK / CODE: BT1

Chairs: ***Erik Lundtang Petersen***, Risø National Laboratory, Denmark
Jørgen Højstrup, Suzlon Energy A/S, Denmark

The session will discuss the following main questions:

- What is the uncertainty range in wind resource estimates at a given site from uncomplicated to complicated climatology and from non-complex to very complex topography?
- How close are we to answering the question: Give me the geographical position co-ordinates and I will give you the wind resource and the design wind statistics with sufficient accuracy?
- What are the most urgent problems to be solved with regard to siting, regional wind resource assessment and related observational techniques?

SPEAKERS:

- HOW WELL DOES THE WEIBULL DISTRIBUTION REPRESENT OBSERVED LONG-TERM WIND SPEED DISTRIBUTIONS?
  Niels G Mortensen, Risø National Laboratory, Denmark
- OBSERVATIONS OF EXTREME SPEED AND DIRECTIONAL WIND SHEAR IN THE US GREAT PLAINS
  Kevin Walter, Texas Tech University, United States of America
- WIND RESOURCE ASSESSMENT IN THE OFFSHORE AND COASTAL DOMAIN OF THE GERMAN BIGHT USING HIGH RESOLUTION VALIDATED MESOSCALE SIMULATIONS COMPARED WITH THE STANDARD TECHNIQUES
  Abha Sood, Carl von Ossietzky University Oldenburg, Germany
- DYNAMICAL DOWNSCALING OF WIND FIELDS IN STRATIFIED FLOW: A HIGH RESOLUTION MESOSCALE APPROACH
  Pedro Miranda, University of Lisbon, Portugal
- A METHODOLOGY FOR ESTIMATING WIND FARM PRODUCTION THROUGH CFD CODES: DESCRIPTION AND VALIDATION
  Daniel Cabezón, CENER, Spain

09:00-10:30 / Energy scenarios

WORKSHOPS TRACK / CODE: BW1

Translated into Italian/Tradotto in italiano.

Moderators: ***Ian Mays***, RES, United Kingdom
Oreste Vigorito, ANEV, Italy

Panel discussion with short introduction from each speaker.

The objective of this workshop is to present and discuss various energy scenarios from different organisations taking into consideration the following points:

- What are the methodologies and assumptions behind the figures?
- What are the implications of the scenarios on capacity installed in different countries?
- What about the progressive move towards offshore and non-EU markets?
- Which policies are needed to make forecasts happen?

SPEAKERS:

- 300 GW REPORT
  Arthouros Zervos, President, European Wind Energy Association (EWEA), Belgium
- ***Fatih Birol***, Chief Economist and Head of the Economic Analysis Division, International Energy Agency (IEA), France
- ***Jean Arnold Vinois***, Head of Unit: Energy Policy & Security of Supply, DG TREN, European Commission
- ***Michael Skelly***, Chief Development Officer of Horizon Wind Energy, Goldman Sachs, United States of America
- EREC SCENARIOS
  Oliver Schäfer, Policy Director, European Renewable Energy Council (EREC), Belgium

10:30-11:00 / **Coffee Break – Exhibition Halls**

11:00-12:30 / Harmonising incentive schemes?

BUSINESS & POLICY TRACK / CODE: BB2

Translated into Italian/Tradotto in italiano.

Moderator: ***Beatriz Yordi***, DG TREN, European Commission

Panel discussion with short introduction from each speaker.

By the end of 2007, the European Commission will publish a report (review of the 2001 renewable electricity directive) in which, among other issues, the possibility of a harmonised support system for RES will be re-assessed.

The objective of this panel discussion will be to answer the following questions:

- Should harmonisation of support mechanisms be recommended?
- What are the steps that should be taken to move towards an effective harmonised system: longer experience, better interconnections, full unbundling?
- What should the chosen system be?

SPEAKERS:

- ***Isabel Blanco***, Policy Director, European Wind Energy Association (EWEA), Belgium
- ***José Donoso***, Development Director, Gamesa Energía, Spain
- ***Lars Andersson***, Division for Energy, Ministry of Enterprise, Energy and Communications, Sweden
- ***Mario Ragwitz***, Fraunhofer Institute Systems and Innovation Research, Germany
- ***Pierre Bornard***, Chairman of ETSO Steering Committee, France

11:00-12:30 / Structural design and materials

SCIENTIFIC TRACK / CODE: BS2

Chair: ***Pantelis Vionis***, Centre for Renewable Energy Sources (CRES), Greece

Despite the misleading assumption that through the increased size of current WTs and the boost in WT installations structural design issues are solved, the increase in the number of recent publications on the subject points otherwise.

There is still much to learn on the material fatigue behaviour under high variable loading for a huge number of cycles and there is still much room for structural optimisation to improve the WT component behaviour.

To cover the former, in this section, a damage model for concrete under multi-stage and multi-axial fatigue model is presented, while for the latter, innovative structural features applied in subscale rotor blades are assessed.

Additionally, the uncertainty in load measurements which are employed during the structural design is evaluated.

SPEAKERS:

- DAMAGE COMPUTATION FOR CONCRETE TOWERS UNDER MULTI-STAGE AND MULTIAXIAL FATIGUE LOADING
  Joachim Goehlmann, Institute of Concrete Construction, Germany
- INCREASED STRENGTH IN WIND TURBINE BLADES THROUGH INNOVATIVE STRUCTURAL DESIGN
  Paul Veers, Sandia National Laboratories, United States of America
- WT LOAD MEASUREMENTS: A COMPARISON BETWEEN LOAD-BASED AND ANALYTICAL CALIBRATION
  Denja Lekou, Centre for Renewable Energy Sources (CRES), Greece

11:00-12:30 / **Forecasting**

TECHNICAL TRACK / CODE: BT2

Chairs: ***Lars Landberg***, Risø National Laboratory, Denmark
George Kariniotakis, Ecole Nationale Superieure des Mines de Paris – ARMINES, France

The session will discuss the following main issues:
- State-of-the-art and latest trends in short-term prediction systems
- Accuracy of present day short-term prediction models
- Value of wind power forecasts for end-users

SPEAKERS:

- METEOROLOGICAL PREDICTABILITY AS A RISK FACTOR IN THE DESIGN, CONSTRUCTION AND OPERATION OF WIND POWER PLANTS
  Anna Hilden, Vejr2 A/S, Denmark
- BEST PRACTICE IN SHORT-TERM FORECASTING — A USERS GUIDE
  Gregor Giebel, Risø National Laboratory, Denmark
- ANEMOS ADVANCED WIND POWER FORECASTING. OPERATIONAL CHALLENGES AND ON-LINE PERFORMANCE
  Ignacio Marti, CENER, Spain
- OPTIMAL COMBINATION OF EUROPEAN WEATHER MODELS FOR IMPROVED WIND POWER PREDICTIONS
  Ulrich Focken, Energy & meteo systems GmbH, Germany
- OPTIMISATION OF WIND POWER PRODUCTION FORECAST PERFORMANCE DURING CRITICAL PERIODS FOR GRID MANAGEMENT
  John Zack, AWS Truewind, LLC, United States of America

11:00-12:30 / **Integration studies**

WORKSHOPS TRACK / CODE: BW2

Translated into Italian/Tradotto in italiano.

Chairs: ***Hannele Holttinen***, VTT, Finland
Ana Estanqueiro, Chair of IEA RD&D WIND Executive Committee (INETI), Portugal

This workshop will focus on the IEA international collaboration on design and operation of power systems with large amounts of wind power. The results of their state-of-the-art report will be summarised with all participants contributing in more detail from their country. The session will also include short overviews of the new EC funded projects EWIS and Tradewind.

SPEAKERS:

- STATE-OF-THE-ART OF DESIGN AND OPERATION OF POWER SYSTEMS WITH LARGE AMOUNTS OF WIND POWER, SUMMARY OF IEA WIND COLLABORATION
  Hannele Holttinen, Operating Agent Task 25, VTT, Finland
- BEST PRACTICES IN GRID INTEGRATION OF VARIABLE WIND POWER: CASE STUDIES FROM RECENT U.S. ANALYSES AND MITIGATION MEASURES
  Brian Parsons, Project Manager, Wind Applications, NREL, United States of America
- EUROPEAN WIND INTEGRATION STUDY EWIS FOR A SUCCESSFUL INTEGRATION OF WIND POWER INTO EUROPEAN ELECTRICITY GRIDS
  D. Klaar, EWIS, Belgium
- TRANSMISSION INVESTMENT FOR WIND GENERATION
  Goran Strbac, Head of Centre of DG&SEE (Distributed Generation and Sustainable Electrical Energy), United Kingdom
- THE ALL ISLAND RENEWABLE GRID STUDY
  Mark O'Malley, Professor at University College Dublin, Ireland
- ASSESSMENT OF EXISTING CONSTRAINTS AND SOLUTIONS FOR HIGH WIND PENETRATION IN POWER SYSTEMS
  Ana Estanqueiro, Wind&Ocean (UEO) R&D Unit Director, INETI, Portugal
- INTEGRATION STATE-OF-THE-ART IN GERMANY
  Cornel Ensslin, Head of Energy Supply Structures, ISET, Germany
- OPERATIONAL COSTS INDUCED BY FLUCTUATING WIND POWER PRODUCTION IN GERMANY AND SCANDINAVIA
  Peter Meibom, Senior Scientist, Risø National Laboratory, Denmark
- 100% WIND ENERGY: CONSEQUENCES ON MARKET AND SYSTEM - STUDY ON A FICTITIOUS WESTERN DANISH POWER SYSTEM
  Antje Orths, Dr.-Ing. at Analysis and Methods, Energinet.dk, Denmark
- INTEGRATION STATE-OF-THE-ART IN SWEDEN
  Lennart Söder, Professor at KTH, Sweden
- IMBALANCE COSTS AND REGULATING POWER MARKET IMPACTS OF WIND POWER
  Hannele Holttinen, Senior Research Scientist, VTT, Finland
- IMPACT OF LARGE SCALE WIND POWER ON SYSTEM ADEQUACY
  John Olav Tande, Research Scientist, SINTEF, Norway
- TRADEWIND - FURTHER DEVELOPING EUROPE'S POWER MARKET FOR LARGE SCALE INTEGRATION OF WIND POWER
  Frans Van Hulle, Senior Technical Advisor, European Wind Energy Association (EWEA), Belgium

12:30-14:00 / **Buffet Lunch – Exhibition Halls**

14:00-15:30 / **Poster Session** (See full list of confirmed poster presentations at www.ewec2007.info)

15:30-16:00 / **Coffee Break – Exhibition Halls**

16:00-17:30 / Integrating wind into electricity markets

BUSINESS & POLICY TRACK / CODE: BB4

Translated into Italian/Tradotto in italiano.

Chairs: ***Isabel Blanco***, European Wind Energy Association (EWEA), Belgium
Poul Erik Morthorst, Risø National Laboratory, Denmark

The feasibility, opportunities and barriers of installing and operating large amounts of wind power capacity in the electric power network from different European perspectives will be presented.

The objective of this session is to answer the following questions:

- How much wind can effectively be integrated within the existing / future European electricity network?
- What changes or additions should be made to the network and system operation in order to maximise the penetration levels?
- Are grid codes required and when?
- How can TSO collaboration improve?
- What is the role of forecasting tools?

SPEAKERS:

- BALANCING MECHANISMS FOR INTEGRATION OF WIND ENERGY IN THE NETHERLANDS
  Geert Timmers, Ecofys The Netherlands BV, The Netherlands
- TRADING WIND ENERGY ON ELECTRICITY MARKETS IN GERMANY
  Matthias Lange, Energy & Meteo Systems GmbH, Germany
- INTEGRATING LARGE AMOUNTS OF WIND IN THE GRID BY USING WIND FOR HEATING
  Rune Moesgaard, Danish Wind Industry Association (DWIA), Denmark
- CURRENT POLICIES AND ACTIVITIES TO IMPROVE THE INTEGRATION OF WIND ENERGY INTO THE GERMAN INTERCONNECTED SYSTEM
  Philipp Siemes, The Institute of Power Systems and Power Economics (IAEW), RWTH Aachen University, Germany
- SPANISH LIBERALISED ELECTRICITY MARKET: WIND ENERGY FORECASTING EXPERIENCES
  Ignacio Láinez Aracama, NEO Energia - EDP Group, Spain

16:00-17:30 / Wind turbine electrical systems and components

SCIENTIFIC TRACK / CODE: BS4

Chairs: ***Cornel Ensslin***, ISET, Germany
Poul Sorensen, Risø National Laboratory, Denmark

It is becoming clear that in order to continue wind energy development all components should be optimised for this application. Recently the focus has been redirected to WT major components that up to now were modified from general purpose machines.

Moreover, as the wind turbines become larger, apart from the major components, such as the generator per se, more components forming supporting systems are added in the list of electrical systems that need optimisation for WT applications.

This session aims to cover some of the new developments in the subject. Thus, integrated design solutions for direct-drive PM synchronous machines will be presented and advancement in the technology of power and data transmission for pitch control will be discussed. Hybrid system performance will also be assessed.

SPEAKERS:

- STRUCTURAL MASS IN DIRECT-DRIVE PERMANENT MAGNET ELECTRICAL GENERATORS
  Alasdair McDonald, University of Edinburgh, United Kingdom
- HYBRID SYSTEM PERFORMANCE: A CASE STUDY
  Luis Arribas, CIEMAT, Spain
- GRID INTEGRATION OF LARGE OFFSHORE WIND FARMS USING STATCOM-CONTROLLED HVDC POWER TRANSMISSION: CONTROL AND ENGINEERING ISSUES
  Serhiy Bozhko, University of Nottingham, United Kingdom

16:00-17:30 / **Loads, noise and wakes**

TECHNICAL TRACK / CODE: BT4

Chairs: ***Sven-Erik Thor***, Vattenfall, Sweden
Spyros Voutsinas, National Technical University of Athens (NTUA), Greece

The session will discuss the following questions:

- How can aero-elastic research help to make wind turbines more reliable and economic especially in view of the current trend towards larger wind turbines?
- Research in the fields of aerodynamics and aero-acoustics has been going on for many years. What are the most relevant results obtained during the last five years and which questions are still open?
- What are the expected outcomes/targets of future research in the considered topics (a look into the crystal ball)?

SPEAKERS:

- AEROELASTIC STABILITY AND CONTROL OF LARGE WIND TURBINES – MAIN RESULTS
  Kenneth Thomsen, Risø National Laboratory, Denmark
- ANALYSIS OF ARRAY EFFICIENCY AT HORNS REV AND THE EFFECT OF ATMOSPHERIC STABILITY
  Leo Enrico Jensen, DONG Energy, Denmark
- EXTRAPOLATION OF EXTREME LOADS ACC. TO IEC61400-1 ED.3 IN COMPARISON WITH THE PHYSICS OF REAL TURBINE RESPONSE
  Dirk Steudel, REpower Systems AG, Germany
- NOISE OPTIMISATION OF A MULTI-MEGAWATT WIND TURBINE
  Søren Hjort, Siemens Wind Power A/S, Denmark
- UPWIND, AERODYNAMICS AND AERO-ELASTICITY. ROTOR AERODYNAMICS IN ATMOSPHERIC SHEAR FLOW
  Niels Nørmark Sørensen, Risø and AAU, Denmark

16:00-17:30 / **Wind resources and site characterisation 2**

WORKSHOPS TRACK / CODE: BW4

Chairs: ***Daniel Cabezon***, CENER, Spain
Abha Sood, Carl von Ossietzky University Oldenburg, Germany

The session will discuss the following questions:

- Estimation of the sources and magnitude of uncertainties in the determination of the extreme wind speed based on measurements and modelling: How can the results be validated?
- Evaluating the added value of complex (first principle) approach using CFD models versus simple linear models over complex terrain: What is the quality of the additional information simulated by the CFD models?
- Cost optimisation using cost-benefit analysis and risk evaluation at sites with extreme weather conditions: How good is the resource assessment for the site in extreme regions?

SPEAKERS:

- THE WIND, THE LOADS AND THE MONEY. HIGH QUALITY WIND & SITE WORK IS THE KEY
  Jørgen Højstrup, Suzlon Energy A/S, Denmark
- STUDY OF EXTREME WIND SPEEDS OF ITALIAN WIND FARM SITES
  Fabrizio Magni, University of Bologna, Italy
- WIND TURBINE, RADAR, AND MILITARY INTERACTION
  Gary Seifert, INL, United States of America
- WIND FARMS IN REGIONS EXPOSED TO TROPICAL CYCLONES
  Niels-Erik Clausen, Risø National Laboratory, Denmark
- VALIDATION OF COMPUTATIONAL FLUID DYNAMICS METHODOLOGY FOR WIND TURBINE SITING
  Jose Palma, CEsA /FEUP, Portugal

17:30 / **Exhibitor Reception – Exhibition Halls**

WEDNESDAY / 9 May 2007

08:00-09:00 / **Registration, Welcome Coffee, Poster Session**

09:00-10:30 / Offshore: developments and prospects

BUSINESS & POLICY TRACK / CODE: CB1

Translated into Italian/Tradotto in italiano.

Chair: ***Johannes Schiel***, VDMA, Germany

The objective of this session is to answer the following questions:

- What are the recent developments of offshore wind in different European countries?
- How is offshore wind energy seen within the general development of the wind energy sector, especially with regards to risk, financing, grids and turbine supply?
- Why a country that does not have offshore wind resources should be interested in the development of this sector?
- What is required to accelerate the implementation of offshore wind?

SPEAKERS:

- KRIEGERS FLAK – OFFSHORE WIND DEVELOPMENT IN THREE DIFFERENT COUNTRIES: LESSONS LEARNED AND PROGRESS EXPECTED
  Gernot Blanke, WPD, Germany
- OFFSHORE WIND ENERGY POLICIES AND THEIR EFFECTS: PROSPECTS FOR THE FUTURE
  Eeke Mast, TU Delft, The Netherlands
- OFFSHORE WIND: DEVELOPMENTS AND PROSPECTS IN ABERDEEN
  Iain Todd, Aberdeen Renewable Energy Group, United Kingdom
- FUTURE FOR OFFSHORE WIND ENERGY IN SPAIN
  Félix Avia, CENER, Spain
- JOINT ACTION BY MEMBER STATES FOR A FUTURE WITH OFFSHORE WIND POWER - OUTCOMES FROM THE 2007 EU POLICY WORKSHOP IN BERLIN
  Jens Bömer, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany
- PRESENTATION OF A 700 MW UTILITY GRADE PROJECT OFF THE FRENCH COASTLINE AND GENERAL OFFSHORE WIND ENERGY DEVELOPMENT SURVEY IN FRANCE
  Pierre Lagandré, La Compagnie du Vent, France

09:00-10:30 / Extreme wind conditions and forecasting techniques

SCIENTIFIC TRACK / CODE: CS1

Chairs: ***Rebecca Barthelmie***, Risø National Laboratory, Denmark
Ignacio Marti, CENER, Spain

Two different subjects of equal importance are presented in this session. On the one hand, the extreme wind conditions seen from the perspective of the wind turbine designer. On the other, wind power forecasting, a significant tool for increasing the value of wind energy allowing for a better integration of wind energy in the electrical system.

The possibility for improving forecasting accuracy using multi-model ensemble techniques, as well as other opportunities for improvements and automation will be presented and discussed.

SPEAKERS:

- INTERMITTENCE AND SCALE SEPARATION ABOVE THE NORTH SEA
  Stephan Barth, ECN, Germany
- IMPROVEMENT AND AUTOMATION OF TOOLS FOR SHORT TERM WIND POWER FORECASTING
  Henrik Aalborg Nielsen, Technical University of Denmark, Denmark
- GOING TO EXTREMES: A PARAMETRIC STUDY ON POT AND OTHERS
  Wiebke Langreder, Suzlon Energy A/S, Denmark

09:00-10:30 / Small wind turbines, distributed generation and autonomous systems

TECHNICAL TRACK / CODE: CT1

Chairs: ***Nikos Hatziargyriou***, National Technical University of Athens (NTUA), Greece
Per Lundsager, Risø National Laboratory, Denmark

The session will discuss the following topics:

- What are the requirements (R&D, guidelines & standards, demonstration and implementation) for further development and application of small wind turbines and hybrid systems in isolated and distributed systems?
- What are the market prospects and different requirements for isolated and distributed systems in the developed/developing regions?
- Application of small wind turbines in difficult areas (including the urban environment)

SPEAKERS:

- BIG EXPERIENCE WITH SMALL WIND TURBINES
  Paul Kühn, ISET, Germany
- BEYOND BARRIERS: A STRATEGIC R&D PLAN FOR SMALL WIND TURBINES DEVELOPMENT
  Ignacio Cruz, CIEMAT, Spain
- PREDICTING THE PERFORMANCE OF SMALL WIND TURBINES IN THE ROOF-TOP URBAN ENVIRONMENT
  Simon Watson, Loughborough University, United Kingdom
- WIND DIESEL SYSTEMS IN DEVELOPING COUNTRIES: TECHNOLOGY, CONTROL STRATEGIES AND ECONOMIC POTENTIAL
  Bungo Ezawa, Lahmeyer International GmbH, Germany
- SEMI OFFSHORE WIND PARK PROJECT IN A WEAK GRID
  Merja Paakkari, Hafmex Windforce Oy, Finland

09:00-10:30 / Cost effectiveness of wind energy

WORKSHOPS TRACK / CODE: CW1

Translated into Italian/Tradotto in italiano.

Chairs: ***Mete Maltepe***, GE Energy, France
Roberto Longo, APER, Italy

The objective of the workshop is to analyse the cost effectiveness of wind in comparison with the other electricity generation technologies. The various methodologies currently being used to estimate the cost and price of wind energy (International Energy Agency, EWEA, ExternE, etc.) will be discussed, taking into account risk, environment impacts, social impacts, portfolio effect etc.

SPEAKERS:

- ***Isabel Blanco***, Policy Director, European Wind Energy Association (EWEA), Belgium
- ***Poul Eric Morthorst***, Senior Research Specialist, Risø National Laboratory, Denmark
- ***Shimon Awerbuch***, Financial Economist, SPRU – University of Sussex, United Kingdom
- ***Anil Markandya***, Professor of Economics, University of Bath, United Kingdom
- ***Olav Hohmeyer*** (tbc), Professor, University of Flensburg, Germany

10:30-11:00 / Coffee Break – Exhibition Halls

11:00-12:30 / Financing wind energy projects

BUSINESS & POLICY TRACK / CODE: CB2

Translated into Italian/Tradotto in italiano.

Chairs: ***Klaus Rave***, Fördergesellschaft Windenergie e.V. (FGW), Germany
Jean-Michel Germa, La Compagnie du Vent, France

The objective of this session is to answer the following questions:

- What returns can investors expect from wind assets?
- How should financial institutions adapt their tools so that they become more suitable for the specific needs of wind energy developers?
- What are the risk parameters/ guarantees that should be taken into account?
- What steps should be taken by the wind industry and decision makers to help make wind a more attractive investment?

SPEAKERS:

- WIND AND POWER DERIVATIVES IN PROJECT FINANCING
  Jan Coelingh, Ecofys Netherlands bv, The Netherlands
- WIND POWER EQUITY RETURNS: WHAT SHOULD INVESTORS EXPECT?
  John Dunlop, HSH Nordbank AG, United Kingdom
- USE OF PROJECT FINANCE FOR OFFSHORE WIND?
  Henrik Balle, DONG Energy Renewables, Denmark
- PORTFOLIO EFFECT OF DIVERSIFIED RENEWABLE ENERGY SOURCES – GAINING BENEFITS FROM THE PORTFOLIO EFFECT OF DIVERSIFIED RENEWABLE ENERGY SOURCES THROUGH A DETAILED UNCERTAINTY ANALYSIS
  Patric Kleineidam, Lahmeyer International, Germany
- EUROPEAN INVESTMENT BANK (EIB) TBC
  Nick Gardiner, Energy & Utilities Group, Fortis, United Kingdom
- ***Christopher Knowles***, Energy and Environment, Structured Finance and Advisory, EIB, Luxembourg

11:00-12:30 / Wind and turbulence

SCIENTIFIC TRACK / CODE: CS2

Chairs: ***Arno Brand***, Energy Research Centre of the Netherlands (ECN), The Netherlands
Ioannis Antoniou, Risø National Laboratory, Denmark

A significant volume of work, both experimental and theoretical, has been done during the last years on understanding the mean flow properties and turbulent structure of the atmospheric boundary layer at flat, complex terrain and, more recently, offshore conditions.

Simulation tools of different levels of complexity have also been developed, starting from fast-running linearised Navier-Stokes approaches then the non-linear Reynolds averaged Navier-Stokes models with one or two equations turbulence closure and, now, the Large Eddy Simulation (LES) models.

The session includes three papers, one for each of the different simulation levels discussed above, discussing best practices in using these models and providing the first LES results regarding the atmospheric turbulence structure.

SPEAKERS:

- RECOMMENDED PRACTICES WHEN ANALYSING WIND FLOW NEAR A FOREST EDGE WITH WASP
  Benoit Dalpé, École de Technologie Supérieure, Canada
- SENSITIVITY ANALYSIS ON TURBULENCE MODELS FOR THE ABL IN COMPLEX TERRAIN
  Daniel Cabezón, CENER, Spain
- ATMOSPHERIC FLOW OVER TERRAIN USING LES
  Andreas Bechmann, Risø National Laboratory, Denmark

11:00-12:30 / **Wind power plants and grid integration**

TECHNICAL TRACK / CODE: CT2

Chairs: ***Frans Van Hulle***, European Wind Energy Association (EWEA), Belgium
Alberto Ceña, Asociación Empresarial Eólica, Spain

The session will discuss the following issues:

- Planning and operation of power generation mix with high levels of wind power penetration, including the application of short-term forecasting.
- Scope of, and experience with, voltage control capabilities of wind farms and interconnection substations, including ancillary equipment?
- Results of models and experimental verification of low voltage ride through behaviour and response of wind turbines and wind farms in view of Grid Code requirements.

SPEAKERS:

- ADVANCED GRID REQUIREMENTS FOR THE INTEGRATION OF WIND FARMS INTO THE SPANISH TRANSMISSION SYSTEM
  Ana Morales, Energy to Quality, S.L., Spain
- REACTIVE POWER CONTROL IN WIND FARMS BY USING THE CAPABILITY OF WIND GENERATORS: REAL EXPERIENCE AND RESULTS
  Emilio Fernandez Antón, Iberdrola Energías Renovables, Spain
- EXPERIENCE WITH VOLTAGE CONTROL FROM LARGE OFFSHORE WIND FARMS FOR THE TRANSMISSION SYSTEM
  Vladislav Akhmatov, ENERGINET.DK, Transmission System Operator of Denmark, Denmark
- GENERATION PLANT MIX COMPLEMENTARY TO WIND
  David O'Connor, Irish Wind Energy Association, Ireland
- VOLTAGE DIPS TESTING CAMPAIGN IN THE ECO74
  Marc Sala, ECOTÈCNIA, s.coop.c.l., Spain
- TOWARDS SMART INTEGRATION OF WIND GENERATION
  George Kariniotakis, Ecole des Mines de Paris - ARMINES, France

11:00-12:30 / **Offshore technology**

WORKSHOPS TRACK / CODE: CW2

Chairs: ***Andrew Henderson***, Acciona, United Kingdom
Kimon Argyriadis, Germanischer Lloyd Industrial Services GmbH-Wind Energy, Germany

The workshop will discuss questions related to the following main topics:

- Transportation and installation methods
- Design methods, design assumptions, and experimental verification for offshore wind turbines and foundations
- Grid connection configurations and technologies
- Expected improvements in offshore wind farm availability

SPEAKERS:

- REPOWER'S EXPERIENCE WITH THE WORLD'S FIRST DEEP-WATER OFFSHORE WIND TURBINE
  Peter Quell, REpower Systems AG, Germany
- WAVE LOADS ON OFFSHORE WIND TURBINE FOUNDATIONS IN SHALLOW WATER. ENGINEERING MODELS VS. REFINED FLOW MODELLING
  Erik Asp Hansen, DHI Water & Environment, Denmark
- PILED CONCRETE FOUNDATIONS FOR OFFSHORE WIND TURBINES
  Per Vølund, Carl Bro, Denmark
- DYNAMICS OF FLOATING WIND TURBINES UTILISING INTEGRATED HYDRO- AND AERODYNAMIC ANALYSIS
  Bjørn Skaare, Hydro Oil & Energy, Norway
- SURVEY OF RELIABILITY OF LARGE OFFSHORE WIND FARMS
  Nicola Barberis Negra, Elsam Engineering A/S, Denmark

12:30-14:00 / **Buffet Lunch – Exhibition Halls**

14:00-15:30 / Global challenges and opportunities

BUSINESS & POLICY TRACK / CODE: CB3

Translated into Italian/Tradotto in italiano.

Chairs: ***Bruce Douglas***, European Wind Energy Association (EWEA), Belgium
Per Hornung Pedersen, Suzlon Energy A/S, Denmark

High level representatives of wind power industry and international organisations will present the main challenges and opportunities in non-European markets.

SPEAKERS:

- ASIA AS THE FUTURE GROWTH MARKET FOR WIND ENERGY
  Aidan Cronin, International Policy Advisor, Vestas Wind Systems A/S, Denmark
- NEW REGULATORY DRIVERS IN KEY WIND MARKETS
  Jonathan Johns, Ernst & Young, United Kingdom
- WIND CONCESSION PROJECTS AND PRICING POLICY TRENDS IN CHINA
  Junfeng Li, Deputy Director, Energy Research Institute, National Development and Reform Commission of China, China
- THE BOOMING U.S. MARKET: SUSTAINING LONG-TERM GROWTH
  Jaime Steve, Legislative Director, American Wind Energy Association (AWEA), United States of America
- ***Søren Krohn***, Senior Energy Specialist, ESMAP, Energy and Water Department, The World Bank, United States of America
- GLOBAL WIND 2006 REPORT. OVERVIEW OF GLOBAL FIGURES AND POLICY DEVELOPMENT IN ALL MARKETS
  Angelika Pullen, Policy and Communications Director, Global Wind Energy Council (GWEC), Belgium

14:00-15:30 / Aeroelasticity, loads and control

SCIENTIFIC TRACK / CODE: CS3

Chairs: ***Flemming Rasmussen***, Risø National Laboratory, Denmark
Herman Snel, Energy Research Centre of the Netherlands (ECN), The Netherlands

Aeroelasticity and control are the primary disciplines to master in designing modern wind turbines. In both areas significant scientific and technological knowledge has been acquired in recent years. Non-linear aeroelastic codes that can handle large deformations and multi-variable control strategies including independent blade control are readily available.

State of the art design tools integrate these new possibilities and promise enhanced reliability in our present effort to mitigate loads through advanced designs. Three applications of such servo-elastic design tools are presented in this session.

SPEAKERS:

- CONTROL DESIGN BASED ON AERO-HYDRO-SERVO-ELASTIC LINEAR MODELS FROM TURBU (ECN)
  Tim Van Engelen, Energy Research Centre of the Netherlands (ECN), The Netherlands
- INDEPENDENT BLADE PITCH CONTROL DESIGN FOR LOAD REDUCTION ON LARGE WIND TURBINES
  Martin Geyler, ISET e.V., Germany
- REDUCTION OF TEETER ANGLE EXCURSIONS FOR A TWO-BLADED DOWNWIND ROTOR USING CYCLIC PITCH CONTROL
  Torben Juul Larsen, Risø National Laboratory, Denmark

14:00-15:30 / Operations and maintenance

TECHNICAL TRACK / CODE: CT3

Chairs: ***Gerard van Bussel***, Section Wind Energy, Faculty LR, TU Delft, The Netherlands
Paul Veers, Sandia National Laboratories, United States of America

The session will discuss the following questions:

- How will improved condition monitoring techniques lead to optimised operation and maintenance?
- How can owners and operators of wind farms better estimate and control future O&M costs?
- What improvements can be made to maintenance personnel training and to offshore maintenance access?

SPEAKERS:

- ADVANCES IN CONDITION MONITORING – LINKING THE INPUT TO THE OUTPUT
  Martin Jones, Insensys Limited, United Kingdom
- DOWNTIME ANALYSIS FOR IMPROVED DECISION-MAKING
  Graeme Hawker, Natural Power Consultants Ltd., United Kingdom
- ESTIMATING COSTS OF OPERATIONS AND MAINTENANCE FOR OFFSHORE WIND FARMS
  Peter Eecen, Energy Research Centre of the Netherlands (ECN), The Netherlands
- A NEW AND INNOVATIVE DOCUMENTATION AND TRAINING MANAGEMENT SYSTEM FOR THE WIND INDUSTRY
  Jens-Thomas Wernicke, Interface.group GmbH, Germany
- AMPELMANN PROTOTYPE - DEVELOPING A MOTION COMPENSATING PLATFORM FOR OFFSHORE ACCESS
  David Cerda Salzmann, Delft University of Technology, The Netherlands

14:00-15:30 / Carbon trading and the emission trading schemes

WORKSHOPS TRACK / CODE: CW3

Translated into Italian/Tradotto in italiano.

Chair(s): ***Bjarne Lundager Jensen***, Danish Wind Industry Association (DWIA), Denmark
Marco Pinetti, ZeroEmission, Italy

The objective of this session is to discuss the EU-ETS review and what changes should be implemented post 2012. The session will also discuss whether carbon trading is the most effective way to control emissions of CO2 and at the same time promote the use of renewable energy.

SPEAKERS:

- ***Peter Liese*** (tbc), Member of European Parliament
- ***Damien Meadows***, Deputy Head of Unit, European Commission
- ***Matthias Duwe***, Director, Climate Action Network CAN-Europe
- ***Abyd Karmali***, Managing Director, ICF International
- ***Karsten Neuhoff***, Research Associate, Faculty of Economics, University of Cambridge, United Kingdom
- ***Andrei Marcu***, President, IETA, Italy

15:30-16:00 / Coffee Break – Exhibition Halls

16:00-17:30 / Investment strategies of power producers

BUSINESS & POLICY TRACK / CODE: CB4

Translated into Italian/Tradotto in italiano.

Chairs: ***Morten B. Keller***, MAKE Consulting, Denmark
Michael Payne, Shell Wind Energy BV, The Netherlands

Panel discussion with short introduction from each speaker

During this session, the representatives of main power producers will present their investment strategies.

The presentations will be based on the following questions:
- What are the investment strategies of the large power producers?
- Why is wind playing an increasingly large part in these strategies?
- What can the wind sector do to help the utilities implement these strategies?

SPEAKERS:

- THE RISE OF THE WIND PORTFOLIO INVESTOR: WIND ACQUISITION STRATEGIES IN A SELLER'S MARKET
  Catalina Robledo, Emerging Energy Research, Spain
- A UTILITY RISK ASSESSMENT OF INVESTMENTS IN WIND POWER
  Kim Ernst, DONG Energy Renewables, Denmark
- WIND POWER SUPPLIERS CHALLENGE TO REACH UTILITY STANDARDS
  Tobias Petrini, Vattenfall, Sweden
- ***Carlos Gascó Travesedo***, Iberdrola Energías Renovables, Spain
- WIND POWER – ENEL INVESTMENT POLICIES IN ITALY AND WORLDWIDE
  Luigi La Pegna, ENEL SpA – Renewable Energy Business Area, Italy

16:00-17:30 / Wind power plants and grid integration

SCIENTIFIC TRACK / CODE: CS4

Chairs: ***Gregor Giebel***, Risø National Laboratory, Denmark
Juergen Schmidt, ISET, Germany

As the wind energy penetration in the grid increased rapidly over the last years and the wind farm total power is becoming comparable to that of conventional power plants, new challenges are continuously introduced for the wind turbine designer, the power suppliers and the grid operators.

The requirements of system flexibility and application of monitoring and control systems necessitate more complex, sophisticated and reliable solutions.

In this session, aiming to improve knowledge about dynamic interaction of system and wind plants, advances in the wind turbine response to grid failures and network transients are discussed in combination with newly developed methods for capturing the power fluctuations at large offshore wind plants.

SPEAKERS:

- FLUCTUATIONS OF OFFSHORE WIND POWER: STATISTICAL MODELLING
  Pierre Pinson, Technical University of Denmark, Denmark
- GRID SUPPORT OF DFIG WIND TURBINES DURING GRID FAULTS
  Anca Daniela Hansen, Risø National Laboratory, Denmark
- CONTROL OF A MULTITERMINAL VSC TRANSMISSION SCHEME FOR CONNECTING OFFSHORE WIND FARMS
  Ralph Hendriks, Delft University of Technology, The Netherlands

16:00-17:30 / Wind turbine electrical systems and components

TECHNICAL TRACK / CODE: CT4

Chairs: ***Andreas Wagner***, GE Energy, Germany
Nick Jenkins, The University of Manchester, United Kingdom

The session will discuss the following questions:

- Is the reliability of wind turbine electrical systems adequate? What is the scope for enhancing the reliability of complex electrical systems in large wind turbines?
- How can improvements in reliability be achieved? Is it through incremental development of components or are fundamental design changes necessary?
- With the ever-increasing height of wind turbines, are lightning protection systems adequate?

SPEAKERS:

- GENERATORS AND CONVERTERS IN LOW AND MEDIUM VOLTAGE WIND ENERGY CONVERSION SYSTEMS
  Josep Bordonau, Technical University of Catalonia, Barcelona, Spain
- RELIABILITY OF TRANSFORMERS FOR MMW TURBINES: SYSTEM COMPATIBILITY AND EFFECT OF SWITCHING TRANSIENTS
  Jan Declercq, Pauwels International, Belgium
- LOAD ASSUMPTIONS FOR THE DESIGN OF ELECTRO MECHANIC PITCH SYSTEMS
  Andreas Manjock, Germanischer Lloyd, Germany
- DESIGN OF NEWGEN DIRECT-DRIVE GENERATOR FOR DEMONSTRATION IN A 3 MW WIND TURBINE
  Staffan Engstrom, Agir konsult AB, Sweden
- A SIMULATION METHOD FOR THE WIND TURBINE'S ELECTRIC FIELD DISTRIBUTION CAUSED BY THE STEPPED LIGHTNING LEADER
  Bastian Lewke, TU Munich, Germany

16:00-17:30 / Wakes

WORKSHOPS TRACK / CODE: CW4

Chairs: ***Gerard Schepers***, Energy Research Centre of the Netherlands (ECN), The Netherlands
Jens Sørensen, Technical University of Denmark, Denmark

Understanding and modeling wind turbine wakes is a need of the past. The interest of the scientific world on wakes revived recently because of their primary effect on the performance and loading of the large multi-array offshore wind farms of the future.

Newly performed detailed measurements, enhanced remote sensing techniques for measuring wind speed and turbulence and advanced CFD based modeling capabilities allow for a significant improvement in the present knowledge level on wake dynamics. The aim of this workshop is to present and discuss some of these new developments.

SPEAKERS:

- ECN TEST FARM MEASUREMENTS FOR VALIDATION OF WAKE MODELS
  Leo A.H. Machielse, Energy Research Centre of the Netherlands (ECN), The Netherlands
- LASER MEASUREMENTS OF WAKE DYNAMICS
  Ferhat Bingol, Risø National Laboratory, Denmark
- SIMULATION AND MODELLING OF TURBULENCE IN WIND FARMS
  Jens N. Sørensen, Technical University of Denmark, Denmark

17:00 / **Beer Reception – Exhibition Halls**

19:30 / **Conference Dinner**

THURSDAY / 10 May 2007

08:00-09:00 / **Registration, Welcome Coffee, Poster Session**

9:00-10:30 / Environmental issues

BUSINESS & POLICY TRACK / CODE: DB1

Translated into Italian/Tradotto in italiano.

Chairs: ***Loïc Blanchard***, European Wind Energy Association (EWEA), Belgium
John Twidell, Wind Engineering Journal, United Kingdom

Wind energy is one of the cleanest, most environmentally friendly energy sources. It emits no air or water pollutants, nor greenhouse gases, requires no mining or drilling for fuel, and produces no toxic waste. However at the local and regional levels wind energy can have impacts, in particular on wildlife and/or habitats. Balancing these concerns is a difficult task, and one that requires both a broad understanding of complex issues combined with detailed and specific environmental information.

This session will address several environmental issues (bird impacts, visual aspects) of offshore and onshore wind farms. Different stakeholders will present their views and practice of integration of environmental concerns in wind energy development and debate the need for guidelines for wind energy development and nature conservation.

SPEAKERS:

- RECOMMENDATION FOR GOOD ENVIRONMENTAL PRACTICE INTO OFFSHORE WIND DEVELOPMENT
  Ib Krag Petersen, NERI, Denmark
- WT-BIRD: BIRD COLLISION MONITORING SYSTEM FOR MULTI-MEGAWATT WIND TURBINES
  Edwin Wiggelinkhuizen, Energy Research Centre of the Netherlands, The Netherlands
- ONSHORE WIND AND ENVIRONMENTAL IMPACTS REQUIREMENTS, EXAMPLE OF GOOD PRACTICE
  Carmen Becerril, Corporate Development, Acciona Energia, Spain
- LANDSCAPE IMPACTS OF LARGE WIND TURBINES, ON AND OFFSHORE
  Jens Pouplier, Brik Nielsen, Denmark
- UK INDUSTRY DELIVERS RECORD CAPACITY, BUT CAN THE 10% TARGET BE MET BY 2010?
  Chris Tomlinson, British Wind Energy Association (BWEA), United Kingdom
- GUIDELINES FOR WIND ENERGY DEVELOPMENT AND EU NATURE CONSERVATION REQUIREMENTS
  Michael O'Briain, DG ENV, European Commission

9:00-10:30 / Condition monitoring, operation and maintenance

SCIENTIFIC TRACK / CODE: DS1

Chairs: ***Friis Troels Pedersen***, Risø National Laboratory, Denmark
Jochen Giebhardt, ISET, Germany

Operation and maintenance of wind turbines and the strongly interrelated subject of condition monitoring have attracted increasing attention over the last years, especially due to the increased installations both on- and offshore and the increased cost of downtime due to the larger wind turbine power capacity. On the other hand, O&M experience from existing installations is accumulating, offering knowledge for optimisation of new projects.

With the aim to cover the whole subject in this session advances in maintenance approaches (regular versus condition based) as well as condition monitoring techniques for offshore wind farms are presented, together with the analysis of the experience from O&M of a large number of wind turbines collected over 15 years.

SPEAKERS:

- TOWARDS QUANTIFICATION OF CONDITION MONITORING BENEFIT FOR WIND TURBINE GENERATORS
  David McMillan, University of Strathclyde, United Kingdom
- CONMOW: CONDITION MONITORING FOR OFFSHORE WIND FARMS
  Edwin Wiggelinkhuizen, Energy Research Centre of the Netherlands (ECN), The Netherlands
- HOW HAS RELIABILITY OF TECHNOLOGIES DEVELOPED THROUGH TIME?
  Erika Echavarria, TU Delft, The Netherlands

9:00-10:30 / **Structural design and materials**

TECHNICAL TRACK / CODE: DT1

Chairs: ***Jos Beurskens***, Energy Research Centre of the Netherlands (ECN), The Netherlands
David Quarton, Garrad Hassan & Partners Ltd., United Kingdom

- What advances in methods for the design analysis of wind turbine structural components will be adopted by the industry over the next 5-10 years? What benefits will these advances bring?
- Is the full scale testing of blades and other wind turbine components likely to become more or less important in the future?
- Does the introduction of probabilistic approaches to wind turbine design calculations result in more optimised structural components, more conservatism, or more uncertainty?
- Is it likely that adaptive blades will ever replace pitch regulated blades?

SPEAKERS:

- SWEEP-TWIST ADAPTIVE BLADE
  Tom Ashwill, Sandia National Laboratories, United States of America
- UPWIND: BLADE MATERIALS AND STRUCTURES
  A.M. Van Wingerde, Knowledge Centre WMC, The Netherlands
- FULL SCALE TESTING OF BLADES: NOW, AND FOR THE FUTURE
  Josef Tadich, Det Norske Veritas, Danmark A/S, Denmark
- FRACTURE MECHANICS AND NEW TECHNIQUES AND CRITERIA FOR THE DESIGN OF STRUCTURAL COMPONENTS FOR WIND TURBINES
  Daniel Trias, National Renewable Energy Centre (CENER), Spain
- A PROBABILISTIC APPROACH TO WIND TURBINE FATIGUE DESIGN
  Dick Veldkamp, Vestas Wind Systems A/S, Denmark

9:00-10:30 / **UpWind workshop — progress and new findings**

WORKSHOPS TRACK / CODE: DW1

Chairs: ***Peter Hjuler Jensen***, Risø National Laboratory, Denmark
Thierry Langlois D'Estaintot, DG RTD, European Commission

In this workshop a progress report and latest results will be presented and discussed. At the end of the workshop time will be available for questions, answers, comments and recommendations to the project.

SPEAKERS:

- SMART ROTOR BLADES & ROTOR CONTROL
  Harald Bersee, Technical University of Delft, The Netherlands
- AERODYNAMICS AND AEROELASTICS
  Flemming Rasmussen, Risø National Laboratory, Denmark
- FOUNDATIONS AND SUPPORT STRUCTURES
  Martin Kuehn, University of Stuttgart, Germany

10:30-11:00 / **Coffee Break – Exhibition Halls**

11:00-12:30 / Winning hearts and minds

BUSINESS & POLICY TRACK / CODE: DB2

Translated into Italian/Tradotto in italiano.

Chairs: ***Isabelle Valentiny***, European Wind Energy Association (EWEA), Belgium
Alison Hill, British Wind Energy Association (BWEA), United Kingdom

This session will be dedicated to the crucial objective of gaining public acceptance. How should we communicate about wind energy to win hearts and minds? Participants will learn more about public acceptance linked to new technologies in general, then speakers will focus on wind energy and will present tools to increase wind energy support. A publicist will also explain what kind of messages work to convince citizens and we will hear success stories from another sector.

The objective of this session is to answer the following question:

- What would be the best way to communicate wind energy messages to win the hearts and minds of the general public as well as increase the support from non-traditional investors, policy makers and journalists?

SPEAKERS:

- ***Christian De la Villehuchet***, CEO, Euro RSCG, Belgium
- ***Jean-Pol Poncelet***, Advisor to the CEO, AREVA SA, France
- WIND FARM SIMULATIONS - THE IMPORTANCE OF ACCURACY FOR VISUAL ASSESSMENTS
  Robert Mann, Truescape Visual Reality, New Zealand
- THE TALENT FACTORY – IF YOU HAVE THE TALENT LET THE WIND LEAD YOU IN A POWERFUL DIRECTION
  Jakob Holst, Danish Wind Industry Association (DWIA), Denmark
- ***Petra Schweizer-Ries*** (tbc), Otto-von-Guericke University, Germany

11:00-12:30 / Offshore technology

SCIENTIFIC TRACK / CODE: DS2

Chairs: ***H.B. Hendriks***, ECN, The Netherlands
Martin Kuehn, University of Stuttgart, Germany

Although offshore development has a number of advantages compared to onshore, it involves some special features, where knowledge should be improved upon and technical challenges need to be tackled in order to accelerate the deployment. Over the last years knowledge gaps are being narrowed in the areas of offshore foundations, loading in special environmental/ marine conditions, etc.

With this purpose, in this session, insight in the stability of the seabed around the (offshore) wind turbine foundation and the influence of wave loads on the scour protection is offered, together with the presentation of an elaborate technique for the estimation of scale of turbulence to produce realistic extreme gusts to improve design calculations.

SPEAKERS:

- ESTIMATION OF SCALE OF TURBULENCE FROM THE GUST FACTOR
  Sten Frandsen, Risø National Laboratory, Denmark
- SCOUR PROTECTION AROUND OFFSHORE WIND TURBINE FOUNDATIONS, FULL SCALE MEASUREMENTS
  Erik Asp Hansen, DHI Water & Environment, Denmark
- SCOUR HOLES OR SCOUR PROTECTION AROUND OFFSHORE WIND TURBINE FOUNDATIONS : EFFECT ON WAVE LOADS
  Erik Asp Hansen, DHI Water & Environment, Denmark

11:00-12:30 / **Advances in measuring methods**

TECHNICAL TRACK / CODE: DT2

Chairs: ***Volker Köhne***, WINDTEST Kaiser-Wilhelm-Koog GmbH, Germany
Pantelis Vionis, Centre for Renewable Energy Sources (CRES), Greece

The session will discuss the following topics:

- State of the art in measuring vertical wind profiles up to high altitudes using Lidar technology.
- Comparative technical and economical advantages of LIDAR, SODAR and conventional techniques.
- Scope of advanced dynamic gearbox testing and analysis in order to improve gearbox reliability.
- Advances in testing and measurements to support performance improvement of wind turbines.

SPEAKERS:

- A COMPARISON CAMPAIGN OF THE ZEPHIR WIND LIDAR AND CLASSICAL CUP WIND SPEED MEASUREMENTS ON- AND OFFSHORE
  Detlef Kindler, WINDTEST Kaiser-Wilhelm-Koog GmbH, Germany
- INFLUENCE OF WIND CHARACTERISTICS ON TURBINE PERFORMANCE
  Ioannis Antoniou, Risø National Laboratory, Denmark
- IMPROVING WIND TURBINE GEARBOX RELIABILITY
  Walt Musial, National Renewable Energy Laboratory, United States of America
- WIND PROFILE RETRIEVAL USING AN INNOVATIVE DOPPLER PULSED LIDAR SIGNAL ANALYSIS
  Julius Lawson Daku, Leosphere, France
- OPTIMISATION OF WIND ENERGY CONVERTERS (WEC)
  Michael Melsheimer, Deutsche WindGuard GmbH, Germany

11:00-12:30 / **Advancing drivetrain reliability**

WORKSHOPS TRACK / CODE: DW2

Chairs: ***Maarten Bogaard***, NUON, The Netherlands
Flemming Van Jensen, DONG Energy, Denmark

This workshop brings together wind turbine, bearing and gear manufacturers to discuss current challenges in wind turbine drivetrains. The objective is to improve the understanding of drivetrain loads, design, validation and the impact on system reliability.

SPEAKERS:

- ***Klaus Ørsted Peterssen***, Siemens Wind Power, Denmark
- ***Martin Correns***, INA/ Schaeffer, Denmark
- ***Brian McNiff***, McNiff Light Industry, United States of America

12:30-13:00 / Closing Session

PLENARY TRACK / CODE: DP3

Translated into Italian/Tradotto in italiano.

The last session of the conference will provide the main conclusions of the event and awards will be presented to the winners of the Poster competition and the Poul La Cour prize.

- CONFERENCE SUMMARY
- POSTER AWARD
- POUL LA COUR PRIZE

13:00-14:00 / **Buffet Lunch and Farewell Cocktail – Conference Centre**

14:00 / **End**

Side events

DOWNVIND

Tuesday, 8 May, 16:00-17:30

Distant Offshore Windfarms with No Visual Impact in Deepwaters
www.beatricewind.co.uk

The session will provide a project progress update to invited delegates. The DOWNVInD 18 member consortium R&D/ Demonstrator project objectives are; "*To develop the technologies, techniques & processes to enable cost effective installation & operation of large capacity Wind Turbine Generators (WTGs) offshore in deepwater.*"

The Demonstrator made substantial progress in summer 2006 with the first of two REpower 5M turbines (WTG A) installed in a novel two stage operation. 1) The substructure was set on the seabed. 2) The complete Tower/WTG was loaded onto a heavy lift vessel, (from the quay where it was pre-assembled) transported offshore and installed on the substructure in one lift. Substructure 2 was set nearby. WTG B will be installed on it summer 07. The 2 WTGs will be field trialled to 2009 to test the technologies and verify the technical/ commercial viability of a full-scale deepwater development. DOWNVInD is coordinated by Talisman Energy (UK) Limited who are main funders with SSE. Support also provided by the EC, DTI and Scottish Executive.

The Beatrice WTG A (Wind Turbine Generator Alpha) being lifted onto its jacket substructure, with Beatrice A oil production platform in the background.

Interested delegates can contact DOWNVInD Project Director Allan MacAskill at amacaskill@talisman.co.uk

Satellites and Wind Energy

Wednesday, 9 May, 16:00–17:30

The Wind Energy Community of Practise (WECP) of GEOSS, Global Earth Observation System of Systems will hold a workshop on satellites and wind energy. Satellite information useful in wind energy will be debated among the following experts from business, science and international organisations :

- ***Mark Ahlstrom***, CEO of WindLogics (USA), co-chair of WECP: WECP and trends in wind energy in America
- ***Frans Van Hulle***, EWEA, member of WECP: Wind power in Europe: trends and challenges
- ***Charlotte Bay Hasager***, Senior Scientist Risø National Laboratory, DTU (DK), co-chair of WECP: Satellites in offshore wind energy: wind resources and wake analysis
- ***Thierry Ranchin***, Head of the OMD Team, ARMINES – Ecole des Mines de Paris (FR), Co-chair of the ECP: Wind energy in the GEOSS initiative: user contribution.
- ***Alessandro Mondini or Lucia Tampellini***, project coordinator, CGSpace (IT): Satellite information in European grid and forecasting
- A representative of IEEE and GEOSS (tbc): GEOSS and the aims for future cooperation

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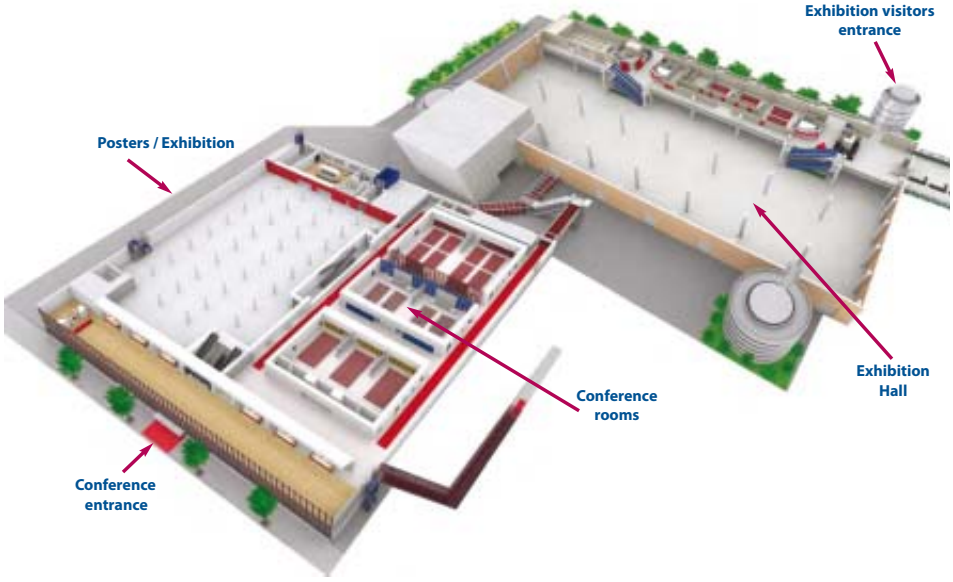
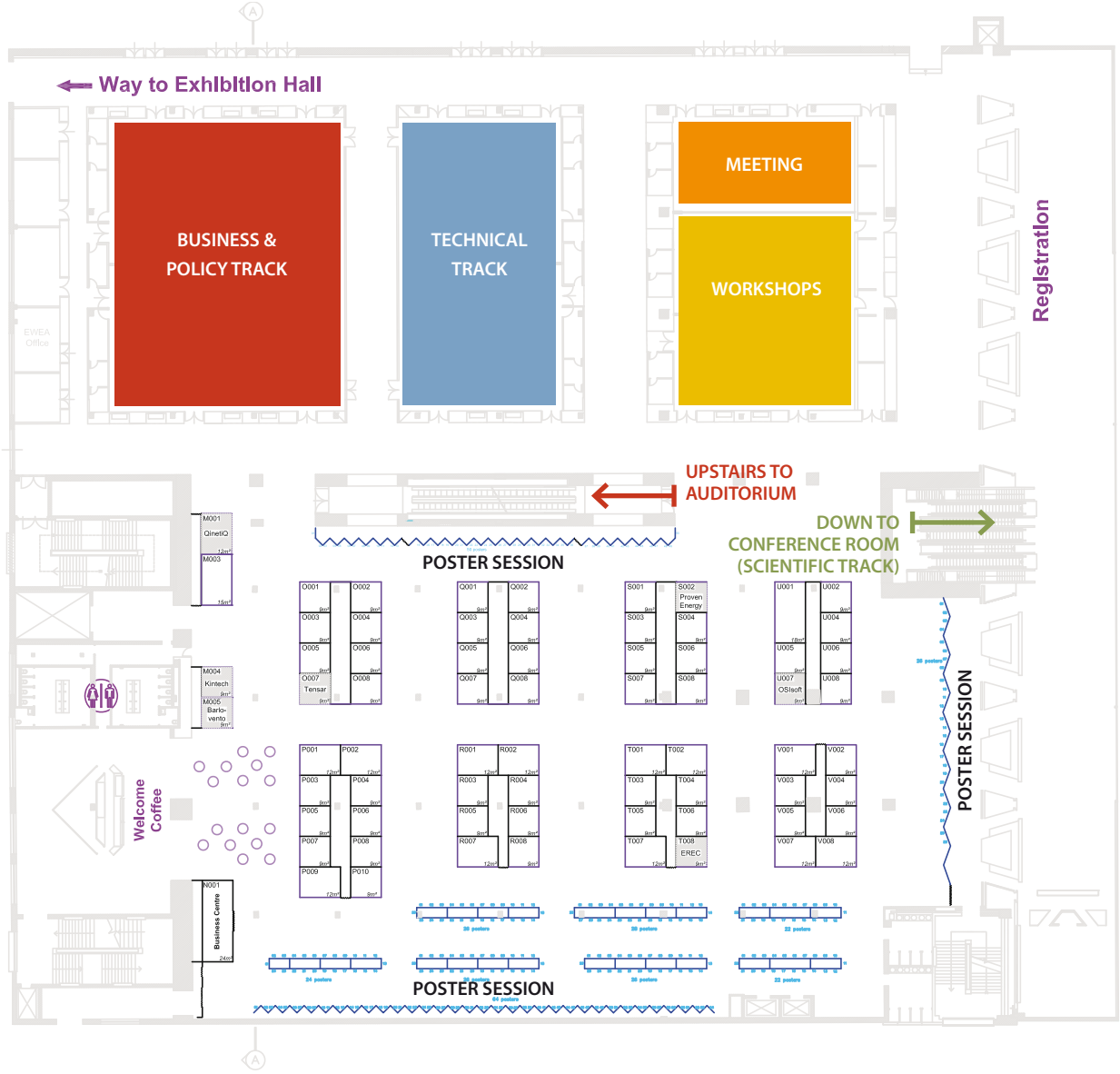
Supporting Organisations

European Commission · 3E · EDORA Edora · GWEC Global Wind Energy Council · EAWE European Academy of Wind Energy · ODE Vlaanderen

Organiser
EWEA

Exhibition floor plan





Exhibition floor plan

Exhibitors

Exhibitor	Country	Stand N°
43D ApS	Denmark	D045 & D061
A2SEA	Denmark	D045 & D061
AAT Inc.	Canada	C011
ABB		E130
Airtricity	Ireland	D107
AL-PRO GmbH & Co. KG	Germany	C023
American Wind Energy Association	United States of America	D007
Ampair	United Kingdom	C112
anemos GmbH	Germany	D125
ANEV	Italy	I011
APER	Italy	I013
Artenergy Publishing s.r.l.	Italy	B022
Asja Ambiente Italia spa	Italy	E121
ASM Energia	Portugal	D010
Atmospheric Systems Corporation	United States of America	E011
ATS Wind Energy Services	United States of America	E002
AVANTI	Denmark	C029
AVN Hydraulik A-S	Denmark	D045 & D061
Bachmann electronic GmbH	Austria	C016
BAE Systems	United Kingdom	A005
BaltShip A/S	Denmark	D045 & D061
BARLOVENTO RECURSOS NATURALES S.L.	Spain	M005
Bayerische Hypo- und Vereinsbank AG UniCredit Markets & Investment Banking	Germany	H125
BBB Umwelttechnik GmbH & MECAL	Germany	E137
Bladt Industries A/S	Denmark	D045 & D061
BLU MINI POWER	Italy	I015
Blue H Technologies BV	The Netherlands	I029
brainLight GmbH	Germany	E009
Brevini Riduttori	Italy	E103
Brøndberg & Tandrup International A/S	Denmark	B034
BWEA	United Kingdom	C021
Carmanah Technologies Corp.	Canada	F131
CENTRE FOR RENEWABLE ENERGY SOURCES (C.R.E.S.)	Greece	G020
CLIPPER WINDPOWER	United States of America	C101
CUBE Engineering GmbH	Germany	G130
CUE DEE Produkter AB	Sweden	E131
Danish University Wind Energy Training	Denmark	D045 & D061
Danish Wind Energy Group	Denmark	D045 & D061
Danish Wind Industry Association	Denmark	D045 & D061
Davi-Promau Srl	Italy	B030
DEIF A/S	Denmark	D045 & D061
Densit a/s	Denmark	D044
Det Norske Veritas	Denmark	E026
deugro Danmark A/S	Denmark	D045 & D061
Deutsche Energie-Agentur GmbH (dena) – the German Energy Agency	Germany	E010
Deutsche Windguard	Germany	D064
DEWI GmbH	Germany	D003
DeWind	Germany	E001
DIgSILENT GmbH	Germany	F007

Exhibitor	Country	Stand N°
Dipartimento di Ingegneria Aerospaziale, Politecnico di Milano	Italy	G125
Draka Cableteq	Denmark	C102
Dynabrade International	United States of America	I021
E.E.I. S.r.l.	Italy	F134
ECN Wind Energy	The Netherlands	A001
Ecofys International	Italia	G022
Econcern	The Netherlands	G022
Ecotècnia	Spain	B041
ELEVADORES GOIAN, S.L.	Spain	C006
Elsevier Ltd	United Kingdom	G006
EMD International A/S	Denmark	G121
Emerging Energy Research	United States of America	B032
Enercon GmbH	Germany	C047
ENERGOTECH SA	Greece	I031
EnerVest AG	Germany	D023
Euro Energy	Denmark	C108
European Renewable Energy Council (EREC)	Belgium	T008
European Wind Energy Association – EWEA	Belgium	E081
EUROS GmbH	Germany	D002
Eurosat Renovables S.L.	Spain	C116
FACCIN s.r.l.	Italy	A003
FERA	Italy	A009
FiberSensing	Portugal	F003
Fortis Windenergy	The Netherlands	C112
FT Technologies	United Kingdom	D045 & D061
Fundación CENER-CIEMAT	Spain	D025
Gamesa	Spain	E061
Garrad Hassan & Partners Ltd.	United Kingdom	C061
GE Energy	Germany	B061
GEO-NET Umweltconsulting GmbH	Germany	C025
German Wind Energy Association (BWE)	Germany	E137
Germanischer Lloyd - Wind Energy	Germany	C041
Global Energy Concepts, LLC	United States of America	C009
Global Wind Energy Council	Belgium	E093
Great Yarmouth & Lowestoft – East of England	United Kingdom	G092
GWU-Umwelttechnik GmbH	Germany	E011
Hailo-Werk	Germany	E020
HANNING & KAHL GmbH & Co KG	Germany	E091
Hansen Transmissions Int.	Belgium	E021
HARTING Electric GmbH & Co. KG	Germany	C045
Hellenic Defence Systems S.A.	Greece	E006
HUSUMwind 2007	Germany	F102
HYTORC Europe	France	D011
I.L.M.E. SpA	Italy	H120
ICQ HOLDING SpA	Italy	C143
INERGIA	Italy	C104
Insensys Ltd	United Kingdom	C001
Institution of Engineering & Technology (IET)	United Kingdom	I027
IRO	The Netherlands	G131
ISET e. V.	Germany	H123

Exhibitors

Exhibitor	Country	Stand N°
JamesWalker RotaBolt	United Kingdom	F005
KARBERG & HENNEMANN srl – C.C.JENSEN	Denmark	D045 & D061
KEMA	The Netherlands	G131
KINTECH Kinematic Technology	Spain	M004
Lahmeyer International GmbH	Germany	A017
Leosphere	France	B020
LM Glasfiber	Denmark	C067
LMS International	Belgium	F124
Lund & Sorensen A/S	Denmark	D045 & D061
Lust DriveTronics GmbH	Germany	C012
MAKE Consulting	Denmark	A019
Mammoet Van Oord BV	The Netherlands	E140
METEK GmbH	Germany	A023
METEODYN	France	D014
Meteosim SL	Spain	G124
METEOTEST	Switzerland	G123
Mierij Meteo Nederland BV	The Netherlands	G131
MillWatcher	Denmark	D045 & D061
Mita-Teknik	Denmark	C131
Moventas Wind Oy	Finland	D103
New and Renewable Energy Centre	United Kingdom	D001
new energy	Germany	E137
Nexgen	United Kingdom	D021
Ningbo Ginlong Technologies Co.,Ltd.	China	F001
Nordex AG	Germany	E041
NRG Systems	United States of America	D041
OBC SHIPPING LTD	United Kingdom	G092
Orga BV	The Netherlands	C125
OSIsoft, Inc.	United States of America	U007
Owens Corning	Belgium	A007
P&S Tensioning Systems Ltd.	Switzerland	I019
PAL SERVICE SRL	Italy	B012
Pauwels International N.V.	Belgium	E031
PB Power	United Kingdom	D121
PMSS	United Kingdom	E125
Polymarin Composites	The Netherlands	B001
Power Climber	Belgium	A021
Proven Energy Ltd	United Kingdom	C112
Proven Energy Ltd	United Kingdom	S002
Province of North-Holland	The Netherlands	B001
PRYSMIAN Kabel und Systeme GmbH	Germany	A013
QinetiQ	United Kingdom	M001
Raedthuys Groep	The Netherlands	B011
Rambøll	Denmark	D045 & D061
Raycap Corporation	Switzerland	G102
Relight	Italy	F125
REMTECH SA	France	D012
Renewable Energy Systems Ltd	United Kingdom	F121
Renewable Energy World	United Kingdom	F103
REpower Systems AG	Germany	B040
Risø National Laboratory – Danish Technical University	Denmark	F012

Exhibitor	Country	Stand N°
ROLLIX	France	E107
Romax Technology	United Kingdom	B010
Ropatec S.r.l.	Italy	C141
ROXTEC ITALIA SRL	Italy	D024
RUGGEDCOM EUROPE	United Kingdom	G136
S&C Electric	United Kingdom	F141
Sartelco Sistemi S.r.l.	Italy	F131
ScanRope Subsea Cables A/S	Norway	D135
Schneider Electric	France	C005
Scintec	Germany	D006
Scottish Development International	United Kingdom	B021
Second Wind, Inc.	United States of America	G008
SEIM S.r.l.	Italy	B014
SGS Industrial Services	Germany	E120
Sicme Motori SpA	Italy	E022
Siemens Wind Power	Denmark	C081
SIME-STROMAG	France	B006
Small Wind Energy Technology Cluster –SWEET	Belgium	C112
SOLAR 3 SA	Switzerland	F105
Spectro Oil Analysis	United Kingdom	G002
Squire Sanders & Dempsey LLP	United Kingdom	C127
SSB-Antriebstechnik GmbH & Co. KG	Germany	C123
Stichting Associatie Technologie Overdracht Noord-Holland	The Netherlands	B001
Studio Rinnovabili	Italy	D026
SunMedia Verlag für Erneuerbare Energien mbH	Germany	D020
Suzlon Wind Energy A/S	Denmark	B081
Svendborg Brakes A/S Deutschland	Germany	D045 & D061
Teamwork Technology B.V.	The Netherlands	B001
Tensar International Ltd	United Kingdom	O007
TEROM SpA	Italy	I023
TÜV NORD Group	Germany	G090
Vejr2 A/S	Denmark	D131
VERLINDE	France	A025
Vestas Wind Systems A/S	Denmark	E071
VESTESEN A/S	Denmark	E142
Wilmers Messtechnik GmbH	Germany	EO11
Wind Energy Solutions	The Netherlands	B001
Wind&Regen	Germany	E011
Windbrokers BV	The Netherlands	H122
Windeco S.L.	Spain	C112
Wind-Link	United Kingdom	D008
Windpower Monthly News Magazine	United States of America	E101
WindPro Insurance	United Kingdom	C121
WindSim AS	Norway	C065
WindSupply	United Kingdom	B021
WINDTEST Grevenbroich GmbH	Germany	D009
WinWinD Oy	Finland	D103
WKA montage Gmbh	Germany	A009
WKN Windkraft Nord AG	Germany	E137
WPD AG	Germany	D027
Zephyr Corporation	Japan	C110

Information

For enquiries, please contact:

GENERAL EWEC QUESTIONS
Tel: +32 2 546 1980
E-mail: info@ewec.info
Web: www.ewec2007.info

REGISTRATION
Tel: +32 2 776 09 96
Fax: +32 2 779 59 60
E-mail: registration@ewec.info

SPEAKERS & PROGRAMME MANAGEMENT
Cristina Munteanu
Malgosia Bartosik
Tel: +32 2 776 09 96
E-mail: programme@ewec.info

EXHIBITION SALES AND STAND ALLOCATION
Silke Schlinnertz
Tel: +32 2 546 1980
Fax: +32 2 546 1944
E-mail: exhibition@ewec.info

LOGISTICS, DELIVERY, BUILD-UP, ON-SITE MANAGER
Dianne Wright
Tel:+44 1926 419 891
E-mail: dianne.wright@opex.co.uk

For more information, online registration and an updated programme visit www.ewec2007.info

A – Z INFORMATION

ACCOMMODATION

Participants wishing to book accommodation during the European Wind Energy Conference & Exhibition 2007 should make their own hotel reservation as follows:

- Directly through a hotel or an agency of your choice
- Or through the following agency:
  Aisc & Mgr Aim Group,
  Via Ripamonti 129
  IT - 20141 Milan, Italy
  Tel: +39 02 5660 11
  Fax: +39 02 5660 9043
  E-mail: accommodation@aimgroup.it
  Web: www.aimgroup.it/2007/ewec

BANKING AND SHOPPING HOURS

Official banking hours can vary slightly, but in general are from 8:30 to 13:30 and from 14:30 to 16:30. Banks are generally closed on weekends and holidays. Supermarkets are open from 8:30 to 21:00. Other shops are often open from 8:30 to 13:00 and from 15:00 to 19:30.

CATERING

A welcome coffee will be served in the poster area (Hall B) from 08:00 every morning, and after all morning and afternoon sessions, coffee, tea and biscuits will be served in the catering areas located in Hall 5. A complimentary buffet lunch is served between 12:00 and 14:00 to all delegates, exhibitors and visitors. Please see the floor plan on page 26-27 for location of the catering areas.

CONFERENCE DINNER

The Conference Dinner will take place on Wednesday 9 May 2007 in a spectacular location. Cocktails and canapés will be served followed by the dinner hosted by Owens Corning. Delegates wishing to attend must fill in the registration form and pay accordingly. Places are limited and tickets will be available on a first signed basis.

CONFERENCE MATERIAL

All conference delegates will receive a Final Programme and Exhibition Catalogue.

CONFERENCE RECEPTION

The Conference Reception will take place on Monday 7 May 2007 in a memorable venue in Milan. Cocktails and canapés will be served. This reception is free of charge to all conference delegates. A valid badge must be shown at the entrance.

CREDIT CARDS AND CASH

Credit cards can be used in most stores and hotels and in many restaurants. A few stores off the main tourist routes do not accept them at all, and others require a minimum purchase, but ATMs are widespread and easy to use. Small amounts of cash are also needed for most forms of transportation, small shops and for other small purchases.

ELECTRICITY

Electric current in Italy is 220V 50Hz. Plugs are of continental European type with two circular metal pins. British appliances require an adaptor and North American ones a transformer.

EMERGENCIES

- CARABINIERI: 112
- POLICE: 113
- FIRE BRIGADE: 115
- Automobile Club SOS: 116
- AMBULANCE: 118
- POLICE: Foreigners and passport office: 02 62261
- Lost Property Office: 02 88453900
- Pharmacies Hotline: 800 801185
- Poison Antidote Centre: 02 66101029

EXHIBITION

For details about the exhibition build-up, stand construction etc. exhibitors should refer to the exhibition manual.

A – Z INFORMATION

EXHIBITORS RECEPTION

The Exhibitors Reception will take place on Tuesday 8 May 2007 from 17:30-19:00, in the MIC Milano Convention Centre, hosted by measnet, International Network for Harmonised and Recognised Measurements in Wind Energy. Entrance to this reception is free to all delegates, exhibitors and visitors.

EXHIBITION VISITORS

To visit the exhibition only, simply register online www.ewec2007.info as from the end of February or on site at the Exhibition Registration Desk at the Exhibitors' entrance to the venue (MIC Milano Convention Centre).
ENTRANCE: Gate Colleoni 9, Milan, Italy (no parking available)
A one day exhibition visitor pass costs 40 Euros. It includes an exhibition catalogue, coffee breaks and buffet lunch. Exhibition visitors will not have access to any of the conference sessions.

FLIGHTS

The airlines of SKYTEAM, Official Alliance Network for EWEC2007, offer attractive airfares for participants. SKYTEAM comprises 10 leading international airlines: Aeroflot, Aeromexico, Air France, Alitalia, Continental, CSA Czech Airlines, Delta, KLM, Korean Air, Northwest Airlines, serving 728 cities in 149 countries with over 15 000 flights daily.
For more information on how to benefit from these special EWEC2007 rates, please go to www.skyteam.com/globalmeetings and enter the event ID "0062S".
Through this site you can also access the schedules of all SKYTEAM partners to plan your flights on the airline of your choice.

LANGUAGE

The Conference language will be English, with the Monday's Plenary sessions, the Press Conference and Business and Policy tracks being translated into Italian.

MILAN

Milan is the capital of Italy's northern region 'Lombardia'. The city is well-known for its exceptional sights, including the Duomo, La Galleria Vittorio Emanuele II, La Scala Opera House or Leonardo's Last supper painting. Besides, Milan is Italy's industrial and financial centre, famous for being one of the main fashion centers in the world.
For more information, please visit:
www.milanoinfotourist.com or
www.turismo.comune.milano.it.

MONEY

The currency in Italy is Euro (€).

PASSPORT & VISAS

Every visitor to Italy must have a valid passport (or ID for Schengen member countries) and a visa if required. Visas are not required for citizens of the EU, the USA, Canada and most major countries. Please contact your local Italian embassy or Consulate for further information.

POST AND TELECOMMUNICATIONS

The international access code for Italy is +39. The outgoing code is 00 followed by the relevant country code (e.g. 0044 for the United Kingdom). The city/area code for Milan is 02. All numbers must be preceded by 02, whether originating in Italy or out, unless calling a mobile phone.

POSTER PRESENTERS

All poster presenters must mount their posters in the correct location, on the boards provided, from 15:00 – 19:00 on Sunday 6 May 2007. There will be attendants available to assist with locating the correct board and to supply fixing/mounting materials. Presenters are requested to have their posters mounted before the start of the opening session at 10:00 on Monday 7 May 2007. See the Conference Programme for Poster session details.

POSTER SESSION

A dedicated poster session will take place on Tuesday 8 May 2007 from 14:00-15:30 in Hall B of the venue. All authors are expected to be present at their posters during this session in order to present their work. The updated list of all the accepted poster presentations can be found on the event web site (www.ewec2007.info) and will also be published in the final programme.

PROCEEDINGS

Proceedings containing all relevant information, papers, presentations, photos and videos will be dispatched to all conference delegates following the conference. A paper copy of the scientific proceedings containing full papers of all scientific oral presentations will be available to all delegates attending the scientific track.

REGISTRATION

Participants may register online at www.ewec2007.info. Please note that registrations taking place after 27 April 2007 can not be made by bank transfer. Onsite registration will commence with pre-registration on Sunday 6 May from 15:00-19:00, and then continue from 08:00-17:30 on Monday 7, Tuesday 8 and Wednesday 9 May and from 8:00-12:00 on Thursday 10 May and will take place:
For the conference participants:
MIC – Milano Convention Centre
(Conference Rooms)
ENTRANCE : Via Gattamelata 5, Milan, Italy
PLEASE NOTE: no staff badges or documentation for exhibitors and exhibition visitors will be distributed from the conference entrance.
For the exhibitors, stand constructors, operators and exhibition visitors: MIC – Milano Convention Centre (Exhibition Area)
ENTRANCE : Gate Colleoni 9, Milan, Italy
Badges will be given to all participants upon registration. Participants will not be admitted to the conference or exhibition without their badges.

TIME ZONE

Italy belongs to the Central European Time Zone (CET), that is 1 hour ahead of Coordinated Universal Time. Its time offset is UTC+1 during standard time and UTC+2 during daylight saving time.

WEATHER

In May: Average daytime high: 23°C (73°F)
Average daytime low: 14°C (57°F)

Social events

Sunday, 6 May 2007

To join this reception your organisation must become a member of EWEA before end of April.
Do not miss this opportunity – join EWEA before EWEC 2007!

18:00-21:00 / **EWEA Members Only Reception**

"Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci" — Sala delle Colonne

EWEA invites you to an evening in one of the most prestigious and unusual locations in Milan. This museum, situated in the old centre of the city is located in a former monastery's historic building of particular charm. You will enjoy drinks, snacks and networking in the monastery's library hall.

During the evening you may also re-live the true da Vinci feeling by joining a guided tour or experimenting with replicas of his inventions.

Sponsored by: EWEA THE EUROPEAN WIND ENERGY ASSOCIATION

Attendance is limited to 2 persons per member company. To attend, please confirm your participation before 30 March 2007 to Jonathan Collings (jc@ewea.org).

Monday, 7 May 2007

17:00-18:00 / **Afternoon Beer Reception**

MIC Exhibition Area Hall 5

Conference delegates, exhibitors and exhibition visitors are invited to the afternoon beer reception to network with other participants and **enjoy a glass of Belgian beer**.

Sponsored by: PAUWELS 60 1947-2007 Hansen TRANSMISSIONS

19:00-21:30 / **Conference Reception**

The official conference reception will be held in a memorable venue in Milan.

While enjoying drinks, locally themed canapés and Italian music, guests will benefit from **exceptional networking opportunities** and spend an **unforgettable evening**.
Delegates wishing to attend must fill in the registration form accordingly. Entrance to the reception is for full fee paying conference delegates only. A valid badge must be shown at the entrance.

Tuesday, 8 May 2007

17:30-19:00 / **Exhibitors Reception**

MIC Exhibition Area Hall 5 and Hall B

The Exhibitors reception will take place on Tuesday in the exhibition area. Cocktails and snacks will be served and Italian music and dance is provided from 17:30, finishing at 19:00.

The reception is free of charge to all conference delegates, exhibitors and exhibition visitors.

Sponsored by: measnet

Wednesday, 9 May 2007

Join us for this memorable night and benefit from the unrivalled networking opportunities

17:00-18:00 / **Afternoon Beer Reception**

MIC Exhibition Area Hall 5

Conference delegates, exhibitors and exhibition visitors are invited to the afternoon beer reception to network with other participants and **enjoy a glass of beer**.

Sponsored by: Gamesa

19:30-23:00 / **Conference Dinner**

The official gala dinner will take place in a spectacular location. A welcome drink and canapés will be served followed by a formal seated dinner with excellent Italian cuisine.

Sponsored by: OWENS CORNING INNOVATIONS FOR LIVING™

Delegates wishing to attend must register online and pay accordingly. Places are limited and will be sold on a first-come first-serve basis.

MARK YOUR DIARY!

2007

EUROPEAN OFFSHORE WIND

Conference & Exhibition

4-6 December, Berlin, Germany

www.eow2007.info

How to reach the venue

Venue

www.micmilano.it

The MIC — Milano Convention Centre — is right in the centre of Milan, 4 km from the Duomo and just 5 minutes from Leonardo's Last Supper. The MIC is the ideal centre, whenever space, professionalism and services are at a premium.

Important note: There are two separate entrances for this event. Please make sure you arrive at the correct one (See Map on page 35)

CONFERENCE
For conference participants:
MIC - Milano Convention Centre (Conference Rooms)
ENTRANCE: Via Gattamelata 5, Milan, Italy

EXHIBITION
For exhibitors, stand constructors, operators and exhibition visitors:
MIC - Milano Convention Centre (Exhibition Area)
ENTRANCE: Gate Colleoni 9, Milan, Italy (no parking available)

How to reach the venue

Within walking distance of the MIC (Milan Convention Centre) there are two subway stations ("Amendola" and "Lotto Fiera" on the red line – for exhibition entrance) and one train station ("Domodossola" – for conference entrance).

You can reach the MIC:

- from Amendola station: continue Viale Enginardo until the exhibition entrance (15 minutes walk)
- from Lotto Fiera station: continue Via Monte Bianco and turn left into Via G.Silva until exhibition entrance (15 minutes walk)
- from Domodossola station: continue Via Domodossola and Viale Duilio until you reach Via Gattamelata conference entrance (10 minutes walk)

Bus Shuttle

On the days of the event (7-10 May) there will be a bus shuttle departing from Metropolitana Gate close to Amendola station. Three buses will be going between 8:00 and 19:00, and stop at Colleoni Gate (exhibition entrance) and Via Gattamelata (conference entrance).
See map on page 35

BY AIR

- **To/from Linate Airport**
  The public bus nr. 73 links Linate Airport's domestic arrivals exit to the City of Milan. Last stop is Piazza San Babila close to the subway. Here take the Red Line 1 (Rho-Fiera direction) to "Amendola Fiera" or "Lotto Fiera"; or get out at "Cadorna" and go up to the main railway station on the ground level: take the first train and get off at "Domodossola".
- **To/from Malpensa Airport**
  The "Malpensa Express" provides a direct rail link to the airport and to Ferrovie Nord "Cadorna" railway station, in downtown Milan. It takes 40 minutes and trains run every half an hour. From Cadorna station take the subway Red Line 1 in the direction of Rho-Fiera and stop at "Amendola Fiera" or "Lotto Fiera"; or go up to the main railway station on the ground level: take the first train and get off at "Domodossola".
- **To/from Orio al Serio Airport**
  There are two buses (Autostradale and Air Pullman) that run from/to Orio al Serio and Stazione Centrale – Central Railway Station. The journey time is 60 minutes. At Stazione Centrale take the subway Green Line 2 and get off at "Cadorna – Triennale". Then get the subway Red Line 1 in the direction of Rho Fiera and stop at "Amendola Fiera" or "Lotto Fiera".

BY TRAIN

- **Trenitalia /** Stazione Centrale and Stazione Garibaldi (Central and Garibaldi Railway Stations)
  Take the subway Green Line 2 in the direction of Abbiategrasso and get off at Cadorna – Triennale. Then get the subway Red Line 1 in the direction of Rho Fiera and stop at "Amendola Fiera" or "Lotto Fiera".
- **Ferrovie Nord** / Piazzale Cadorna (Nord Railway Station)
  From Cadorna station take the subway Red Line 1 in the direction of Rho-Fiera and stop at "Amendola Fiera" or "Lotto Fiera"; or go up to the main railway station on the ground level: take the first train and get off at "Domodossola".

BY CAR

From the Milan link roads, follow the signs to the large car parking lots adjacent to the following subway stations: CASCINA GOBBA (Green Line / 1800 cars), SAN DONATO (Yellow Line / 1800 cars), FAMAGOSTA (Green Line / 3000 cars), BISCEGLIE (Red Line / 1900 cars), LAMPUGNANO (Red Line / 2000 cars).

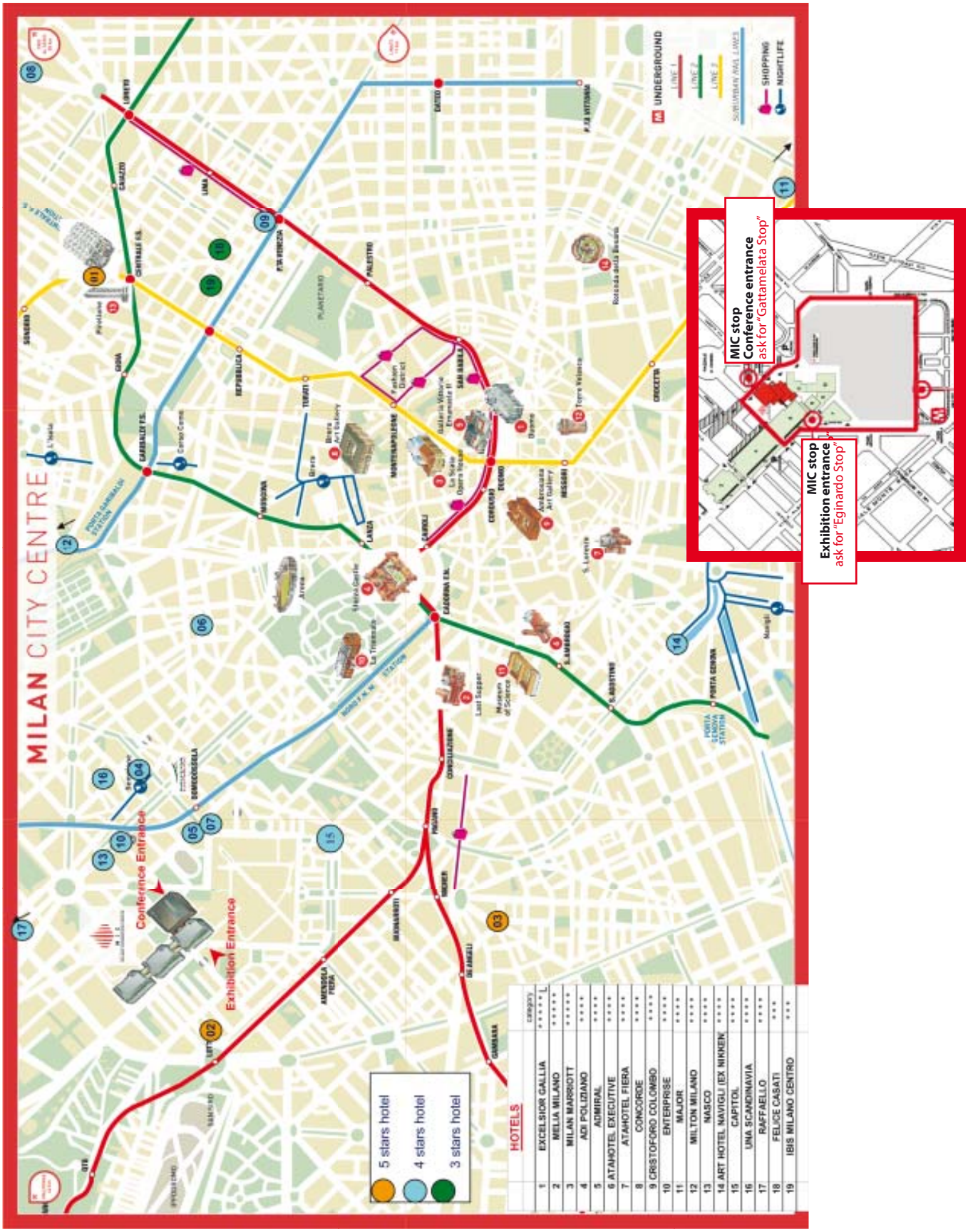
BY PUBLIC TRANSPORT

- **Buses & Trams**
  The MIC is also on the following bus and tram routes:
  - Bus no. 78 – get off at Colleoni (useful for the Exhibition);
  - Tram no. 19 – get off Largo Domodossola (useful for the Congress Rooms);
  - Trams no. 1 and no. 33 and buses no. 57 and no. 94, all stop on the corner between Corso Sempione and Via Domodossola (useful for the Congress Rooms)
- **Subway**
  To get to the MIC take the Red Line 1 (Rho-Fiera direction) to "Amendola Fiera" or "Lotto Fiera".
- **Taxi**
  To the venue: Taxis are not very easy to flag down on the street. The best thing to do is go to a taxi stand or to call one. When calling a radio taxi, the meter starts running as soon as the driver gets the call. A few Radio Taxi companies:

  Radio Taxi 02 8585 Radio Taxi 02 8383 Radio Taxi 02 5353
  Radio Taxi 02 6767 Radio Taxi 02 3100

  From the venue: There are two taxi stands next to the venue: in Via Gattamelata and near the Colleoni Gate. You may also order a taxi via our info desk situated in the conference and exhibition registration area.

Map of Milan


MILAN CITY CENTRE
Conference Entrance
Exhibition Entrance
MIC stop
Conference entrance
ask for "Gattamelata Stop"
MIC stop
Exhibition entrance
ask for "Eginardo Stop"
5 stars hotel
4 stars hotel
3 stars hotel
HOTELS
1 EXCELSIOR GALLIA
2 MELIA MILANO
3 MILAN MARRIOTT
4 ADI POLDIANO
5 ADMIRAL
6 ATAHOTEL EXECUTIVE
7 ATAHOTEL FIERA
8 CONCORDE
9 CRISTOFORO COLOMBO
10 ENTERPRISE
11 MAJOR
12 MILTON MILANO
13 NASCO
14 ART HOTEL NAVIGLI (EX NIKKEN)
15 CAPITOL
16 UNA SCANDINAVIA
17 RAFFAELLO
18 FELICE CASATI
19 IBIS MILANO CENTRO

Thank you

Supporting Organisations

Conference programme

Intelligent Energy Europe

International partner

GWEC
GLOBAL WIND ENERGY COUNCIL

National associations

anev
associazione nazionale energia del vento

APER
ASSOCIAZIONE PRODUTTORI ENERGIA DA FONTI RINNOVABILI

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RES
Renewable Energy Systems

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GRUPPOFALCK

Coffee Breaks

LM
LM Glasfiber

Exhibition Catalogue

WindPro

Lunch — 9 May 2007

FORTIS

Badge Ribbons – Exhibition Visitors

WPD

Beer Reception

Gamesa

Beer Reception

60 PAUWELS 1947-2007

Hansen TRANSMISSIONS

Registration information

"…a great chance to know the insiders of the wind industry and the cutting-edge technologies to change the future world energy market."
Sanlian Lifeweek (PRC)

"…once again an important exhibition in the SCS promotional calendar and yielded many new important enquiries and new contacts."
Solent Composite Systems Ltd (UK)

Registration information

Conference

Access to all sessions, exhibition and conference activities is subject to availability. Participants are encouraged to register in advance and as early as possible in order to benefit from lower registration fees and social events availability.

All registrations for the conference must be done online: www.ewec2007.info

Registration fees are based on the date of receipt. The prices indicated are per person and are only applicable if BOTH the registration form AND the payment are received before the deadlines, otherwise the higher registration fees will be applied.

Category	Registration payment received before 27.04.2007	After 27.04. you must register onsite
EWEA/APER/ANEV Member*		
(4-day ticket)	€ 900	€ 1000
(1-day ticket)	€ 450	€ 500
Non-Member		
(4-day ticket)	€ 1100	€ 1200
(1-day ticket)	€ 550	€ 600
Student**		
(4-day ticket)	€ 300	€ 350
(1-day ticket)	€ 150	€ 175
Social event	€ 120	€ 120

*Members
Please note that if you are not listed on the EWEA and/or APER (Associazione Produttori Energia da Fonti Rinnovabili) and/or ANEV (Associazone Nazionale Energia del Vento) membership list, the organisers reserve the right to register and charge the non-member registration fee to your account or credit card.

**Students
Student registration will be processed only upon receipt of the following documents: a) a copy of ID card proving the age under 30 years; b) a personalised letter signed by the head of the relevant university or institutional department proving the full-time student status. These documents should be sent, when submitting registration form, by email at registration@ewec.info or by fax at +32 2 779 59 60. Without these documents, the organisers reserve the right to register and charge the full registration fee to your account or credit card.

Exhibition

To visit the exhibition only, simply register online as from end of February or onsite. Exhibition entrance fee: **€ 40 / day** (includes all coffee breaks, lunch and exhibition catalogue).

Registration fees include: (1) Local VAT at 20%, (2) Exhibition catalogue, (3) Conference proceedings (except for one-day tickets and exhibition visitors), (4) 2 coffee breaks and 2-course buffet lunch per day, (5) Entrance to exhibition hall, (6) Conference reception (except for exhibition staff and visitors), (7) Exhibitors Reception

All registrations must be done online: www.ewec2007.info

Register now to save up to 100 €

Environmental Policy Statement

EWEA aims to deliver a high quality, professional event whilst being as sustainable as possible.
The following steps are therefore being taken to minimise the impact of EWEC on the environment:

- Paper free event:
  Abstract submission and review – 100% online
  Registrations – 100% online
- Maximising use of electronic marketing (newsletters + website)
- Delegate bags – 100% recycled material
- All printed material – 100% recycled or sustainably produced paper

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EWEA
THE EUROPEAN WIND ENERGY ASSOCIATION

25 YEARS POWERING CHANGE

Join the most powerful wind energy network

EWEA is the voice of the wind industry – promoting the best interests of the sector in Europe and worldwide for the past 25 years. The association is at the very heart of this European wind power industry and the policy debate that shapes the future of the sector.

Europe leads the world in wind power technology and know how with over 48 000 MW of installed capacity at the end of 2006 in the EU, representing around 65% of the global total in installed wind power.

EWEA members include manufacturers covering 98% of the global wind power market, as well as component suppliers, research institutes, national wind and renewables associations, developers, electricity providers, finance and insurance companies and consultants. The combined strength of more than 300 members from over 40 countries makes EWEA the world's largest and most powerful renewable energy association.

Located in Brussels, the EWEA Secretariat co-ordinates international policy, communications, research and analysis. EWEA supports the needs of its members, manages European programmes and hosts events.

EWEA is a founding member of both the European Renewable Energy Council (EREC), which groups the 8 key renewable industry and research associations under one roof, and the Global Wind Energy Council (GWEC), the global forum for the wind energy sector uniting the wind industry and its representative associations.

EREC

GWEC

EWEA MEMBERS INCLUDE THE FOLLOWING LEADING COMPANIES:

acciona Energía · Airtricity The Natural Progression · DONG energy · GE Energy · IBERDROLA · LM Glasfiber · RES Renewable Energy Systems · Shell WindEnergy · SIEMENS · SUZLON · Vestas

Position your organisation at the heart of the European wind power industry and policy debate

Membership of EWEA gives you access to the intelligence and services your company needs, on the opportunities and challenges that are driving your business. Our resources are focussed on lobbying and policy activities, and responding to enquiries from our members. EWEA is protecting your interests and lobbying at the highest level on the issues that affect your future.

Key Benefits of EWEA Membership:

You will have active participation in policy development

- Directly influence policy, promotion and development of European wind power
- Take advantage of opportunities for involvement in EWEA policy working groups
- Benefit from unrivalled networking opportunities with other EWEA members, the Executive Committee, Board, staff and other leading players

You will have priority access to key industry information

- Exclusive access to EWEA staff, information resources and research library
- Receive regular copies of EWEA reports, electronic newsletters, press releases, and briefings
- Monthly members-only email newsletter, "Brussels Briefing", containing timely and relevant policy information
- Free subscription to Wind Directions magazine
- Access to the Members-Only area of the web site, containing key information and a members directory.

You will have greater opportunities to raise your profile

- Web link from EWEA directory to your homepage
- Priority invitation to participate in all EWEA events
- Announcement in Wind Directions of your company's activities and events

And you can even get discounts

- Over 30% off exhibition space at all EWEA events
- Up to 30% off delegate fees to conferences, workshops and seminars
- 10% off advertising space in Wind Directions magazine

Join EWEA

to be part of Europe's most influential wind energy network and recognised voice of the wind industry.

www.ewea.org

Membership application

To join simply complete, sign and return this form by fax + 32 2 546 19 44

JOIN EWEA

Contact: Silke Schlinnertz
T: + 32 2546 1980
F: + 32 2546 1944
silke.schlinnertz@ewea.org
www.ewea.org

My organisation would like to become a member of EWEA. Please invoice me accordingly:

Company Name: _____

Contact Person: ☐ Mr. ☐ Ms. ☐ Mrs. _____

Address: _____ n°: _____

Postcode: _____ City: _____

Country: _____

Tel: _____ Fax: _____

E-mail: _____

Web Site: _____

VAT No.: _____

Invoice address (if different from above): please indicate on a separate sheet

Membership Profile

- ☐ Wind Turbine Manufacturer
- ☐ Component / Materials Manufacturer
- ☐ R&D / University / Institute
- ☐ EU Association
- ☐ Consultancy
- ☐ Event Organiser
- ☐ Non EU Association
- ☐ Electricity generator / Utility
- ☐ Finance / Insurance
- ☐ Developer
- ☐ Certification body
- ☐ Service provider
- ☐ Other

Please provide a brief description of your company and its main activities, which will be published in Wind Directions magazine.

What type of membership are you eligible for? Please tick as appropriate below:

	Category	Eligibility	Annual Fee
Association Membership (reserved for non-profit organisations)			
☐	**A1**	Associations legally based in the European Union and active in the field of wind energy, having more than 500 members or an annual turnover of at least € 500,000.	€ **2.910**
☐	**A2**	Associations legally based in the European Union and active in the field of wind energy, having between 101 and 500 members or an annual turnover ranging between € 100,000 and € 500,000.	€ **1.455**
☐	**A3**	Associations legally based in the European Union and active in the field of wind energy, and having up to 100 members, or an annual turnover of up to € 100,000. This category also includes EU academic institutions and EU non profit institutions or organisations active in the field of wind energy.	€ **582**
☐	**AM**	Non wind energy associations, non-European Union Associations, non-European Union academic institutions and other non-European Union non profit associations or organisations.	€ **582**
Corporate Membership			
☐	**C0**	Corporations having an annual turnover in the wind energy sector exceeding € 65 million.	€ **20.367**
☐	**C1**	Corporations having an annual turnover in the wind energy sector ranging between € 6.5 million and € 65 million.	€ **10.183**
☐	**C2**	Corporations having an annual turnover in the wind energy sector up to € 6.5 million.	€ **5.092**
☐	**C3**	Corporations having an annual turnover in the wind energy sector ranging between € 650.000 and € 3 million.	€ **2.910**
☐	**C4**	Corporations having an annual turnover in the wind energy sector not exceeding € 650.000.	€ **1.455**
Lead Sponsor			
☐	**LS**	Open to all associations and corporations.	€ **37.950***

*(plus € 44 per € million turnover in the wind energy sector)

Payment :

☐ Credit Card (Visa, Eurocard, Mastercard):

Credit Card Number : _____ Expiry date : _____

Credit Card Holder : _____

☐ Bank Transfer:

Account name – European Wind Energy Association
Bank: Fortis Bank Quartier Leopold, Place du Luxembourg, Brussels 1050, Belgium
Account number 210-0377413-38 (€ account) BIC code: GEBABEBB IBAN code: BE24210037741338

Terms and conditions:Signature of this form represents a binding contract and your organisation must then follow the statutes of EWEA. Membership is only active upon payment of the above fees and must be retained for at least 12 calendar months from the date of signature. Membership fees are invoiced on an annual basis from January each year. Fees are invoiced pro-rata according to the date of signature. Cancellation of membership can only be carried out at the end of each year, by sending a registered letter at least 3 months prior to the end of the year.

Signature: Date:

PROGRAMME OVERVIEW

Time	SUNDAY, 6 MAY 2007			
18:00	EWEA members only reception			
Time	**MONDAY, 7 MAY 2007**			
08:00	REGISTRATION, WELCOME COFFEE, POSTER SESSION			
10:00	AP1: Opening Session			
12:00	PRESS CONFERENCE AND OFFICIAL EXHIBITION OPENING & BUFFET LUNCH — EXHIBITION HALLS			
14:00	AP2: Renewable energy road map (panel discussion)			
15:30	COFFEE BREAK — EXHIBITION HALLS			
16:00 17:30	AP3: Changing structure of the wind industry (panel discussion)			
17:00	BEER RECEPTION — EXHIBITION HALLS			
19:00	CONFERENCE RECEPTION			
Time	**TUESDAY, 8 MAY 2007**			
	Business & Policy	Scientific	Technical	Workshops
08:00	REGISTRATION, WELCOME COFFEE, POSTER SESSION			
09:00	BB1: Policies and programmes	BS1: Aerodynamics and innovation in turbine design	BT1: Wind resources and site characterisation 1	BW1: Energy scenarios
10:30	COFFEE BREAK — EXHIBITION HALLS			
11:00	BB2: Harmonising incentive schemes? (panel discussion)	BS2: Structural design and materials	BT2: Forecasting	BW2: Integration studies
12:30	BUFFET LUNCH — EXHIBITION HALLS			
14:00	Poster Session			
15:30	COFFEE BREAK — EXHIBITION HALLS			
16:00	BB4: Integrating wind into electricity markets	BS4: Wind turbine electrical systems and components	BT4: Loads, noise and wakes	BW4: Wind resources and site characterisation 2 (technical workshop)
17:30	EXHIBITOR RECEPTION — EXHIBITION HALLS			
Time	**WEDNESDAY, 9 MAY 2007**			
	Business & Policy	Scientific	Technical	Workshops
08:00	REGISTRATION, WELCOME COFFEE, POSTER SESSION			
09:00	CB1: Offshore: developments and prospects	CS1: Extreme wind conditions and forecasting techniques	CT1: Small wind turbines, distributed generation and autonomous systems	CW1: Cost effectiveness of wind energy
10:30	COFFEE BREAK — EXHIBITION HALLS			
11:00	CB2: Financing wind energy projects	CS2: Wind and turbulence	CT2: Wind power plants and grid integration	CW2: Offshore technology (technical workshop)
12:30	BUFFET LUNCH — EXHIBITION HALLS			
14:00	CB3: Global challenges and opportunities	CS3: Aeroelasticity, loads and control	CT3: Operations and maintenance	CW3: Carbon trading and the emission trading schemes
15:30	COFFEE BREAK — EXHIBITION HALLS			
16:00 17:30	CB4: Investment strategies of power producers (panel discussion)	CS4: Wind power plants and grid integration	CT4: Wind turbine electrical systems and components	CW4: Wakes (scientific workshop)
17:00	BEER RECEPTION — EXHIBITION HALLS			
19:30	CONFERENCE DINNER			
Time	**THURSDAY, 10 MAY 2007**			
	Business & Policy	Scientific	Technical	Workshops
08:00	REGISTRATION, WELCOME COFFEE, POSTER SESSION			
09:00	DB1: Environmental issues	DS1: Condition monitoring, operation and maintenance	DT1: Structural design and materials	DW1: UpWind workshop — progress and new findings
10:30	COFFEE BREAK — EXHIBITION HALLS			
11:00	DB2: Winning hearts and minds	DS2: Offshore technology	DT2: Advances in measuring methods	DW2: Advancing drivetrain reliability
12:30	DP3: Closing Session			
13:00	BUFFET LUNCH AND FAREWELL COCKTAIL — CONFERENCE AREA			
14:00	END			

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