COWEC

CONFERENCE OF THE WINDPOWER ENGINEERING COMMUNITY

WITH EXHIBITION

JUNE 18–19, 2013 / BERLIN, GERMANY

An event organized by VDI Wissensforum GmbH

Over 80 renown speakers from 20 countries will speak on the following topics:

– Innovative Gearbox Design: Today and Tomorrow
– Increasing Reliability of Main Shaft Bearings
– Future Rotor Blade Designs
– Effective Reliability and Failure Analysis of Wind Turbines
– Innovative Technology for Vibration Control & Damping
– Testing and Simulations – New Approaches to realistic Load Assumptions
– Offshore Certification and Risk Analysis
– New Concepts for a Sustainable Maintenance
– International Emerging Markets for Wind Power

Highlight: Conference includes an excursion to ENERCON

+ Panel discussion:
"What can manufactures do to reduce the cost of energy?"

+ Panel discussion:
"Which further expansion of wind energy in Europe is desirable?"

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MONDAY, JUNE 17, 2013

HIGHLIGHT!

VISIT THE PRODUCTION SITE OF ENERCON GMBH IN MAGDEBURG

ENERCON is one of the leading manufacturers for wind turbines at international level. Don't miss this unique opportunity to visit the production site of ENERCON GmbH in Magdeburg.

The tour starts in Berlin by bus to the production site of Enercon GmbH in Magdeburg. Different sites of the ENERCON production site will be visited and explained in detail by our tourguide.

Important note:
The tour can only be booked in combination with the conference. Please make sure that you book this option in addition online when already registered for the conference at www.cowec.de. There are just a limited number of places! First come – first serve!

TUESDAY, JUNE 18, 2013 – 1ST DAY

09:30 **Registration & welcome coffee**

10:30 **Presidents' welcome and opening address by Dr. Andrew Garrad and Prof. Dr.-Ing. Andreas Reuter**

10:45

Opening speech: "Wind energy: Short term turbulence, long term growth"
- How can manufacturers and suppliers meet the growing and competitive pressure?
- What the wind energy market needs for continued growth?
- Where are the growing markets for wind energy worldwide?

Dr. Andrew Garrad, President, GL Garrad Hassan, United Kingdom

11:15 Panel discussion Manufacturer: **"What can manufactures do to reduce the cost of energy?"**

Chairman:

Prof. Dr.-Ing. Andreas Reuter, Managing Director, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Bremerhaven, Germany

Participants:

Jörg Scholle, Executive Vice President, Head of Global Engineering & Product Line Management, Nordex SE, Hamburg/Rostock, Germany

Dr. Martin Knops, Senior Vice President R&D, Drive Train Technology RDD, REpower Systems SE, Osterrönfeld, Germany

Markus Becker, CTO, KENERSYS GmbH, Münster, Germany

Jean Huby, Managing Director, AREVA Wind GmbH, Bremerhaven, Germany

Volker Kendziorra, Managing Director, ENERCON Service Deutschland GmbH, Aurich, Germany

12:15 Lunch and Networking Break, Visit to Exhibition

	Lecture Room Estrelsaal A/B	Lecture Room 1CC	Lecture Room Estrelsaal C1/C2	Lecture Room Paris	Lecture Room Estrelsaal C5/C6
	Innovative Gearbox Design: Today and Tomorrow	**Future Rotor Blade Designs**	**Exact Wheather Forecasting Models and Operational Systems**	**Effective Vibration Monitoring**	**Electrical Components – Technologies for the Future**
	Chairman: **Jean Huby,** Managing Director, AREVA Wind GmbH, Bremerhaven, Germany	Chairman: **Dr. Andrew Garrad,** President, GL Garrad Hassan, United Kingdom	Chairman: **Ignacio Láinez Aracama,** Director, Evaluación Energética en EDP Renováveis, Spain	Chairman: **Christian Nath,** Senior Advisor Wind Energy, Barsbüttel, Germany	Chairman: **Stefan Franko,** Director Renewable Energy, GE Power Conversion, Berlin, Germany
14:15	**Integrated testing strategy for gearboxes** ■ Complementary methods to develop high quality and high reliable drive train components ■ Gearbox validation strategy according to an 8-Milestone validation plan ■ Technical challenges for the development of drive train components ■ Gearbox reliability based on field results **Dr. Martin Knops,** Senior Vice President R&D; co-author: Dr. Ralf Hambrecht, REpower Systems SE, Osterrönfeld, Germany	**Load reduction potential on large wind turbines** ■ Efficient reduction of aerodynamic loads ■ Implementation of active trailing edge flaps to vary the turbine dynamics ■ Sustainable improvement of the aerodynamic behavior of large wind turbines **Jaione Ortega Gómez, M.Sc.,** Research Assistant; co-author: Dr.-Ing. Claudio Balzani, Department for Wind Energy Systems, Leibniz University Hanover, Germany	**Enhancements of the mesoscale community model for wind resource assessment** ■ Open-source wind power assessment software based on MC2 model ■ New space-time discretization scheme for mesoscale modeling ■ Enhanced 3D turbulence closure for the MC2 mesoscale model **Alex Geovanny Flores-Maradiaga, M.Sc.,** Research Assistant; co-authors: Robert Benoit, Ph.D., École de Technologie Supérieure, University of Quebec, Montreal, Claude Girard, Ph.D, Meteorological Service, Canada	**Decisive smart blade sensing – A vibration analysis** ■ Specific strain sensor operational method ■ Essential field implementation for the dynamic behavior and structural integrity ■ Test results and vibration analysis **Dawid Janse van Vuuren, M.Eng.,** R&D Engineer; co-authors: Dr. Detlef Krabe, Josef Wittl, Avago Technologies Fiber GmbH, Regensburg, Germany	**Artificial neural network control systems for Wind-PV hybrid power systems** ■ PV array model: Direct conversion of solar energy to electricity ■ Implementing electrical analogues of the biological neural networks (ANN) ■ Innovative Wind-PV hybrid power systems **Kerim Karabacak, M.Sc.,** Lecturer, Kutahya Technical Vocational School, Dumlupinar University, Kutahya, Turkey; co-author: Assist. Prof. Dr. Numan Cetin, Department of Solar Energy, Ege University, Izmir, Turkey
14:45	**From component to system: Integrated drive train development** ■ Characteristics of a hybrid drive system with more than 96 % efficiency ■ Measurement results of sub-systems and complete systems **Dipl.-Phys. Florian Hanisch,** VP Engineering; co-author: Dipl.-Chem. Mark Zundel, Winergy AG, Voerde, Germany	**Rotor blade repairs with advanced UV curing resin systems** ■ Typical blade damages seen everywhere ■ Consequences of neglection: Actual real life cases ■ Reasons for a reactive instead of pre-emptive approach on blade maintenance ■ Retrospect: Development of blade repairs over the last years **Ville Karkkolainen,** B.BA., Managing Director, Bladefence, Vantaa, Finland	**Short-term wind forecasting on- and offshore** ■ Identification of the current and the prospective users ■ Analysis of the accuracy of the forecasts – Various scenarios ■ Differences between on- and offshore forecasting methods ■ Short- and medium-term developments and challenges **Dr. Lars Landberg,** Senior Vice President, GL Garrad Hassan, Copenhagen, Denmark; co-author: Jeremy Parkes, GL Garrad Hassan, Bristol, United Kingdom	**Effective large scale wind turbine condition monitoring** ■ Rising challenges with condition monitoring of wind turbine fleets scaling up ■ Topology of wind turbine condition monitoring ■ Efficient monitoring and SCADA integration **Dr. Axel Juhl,** CEO R&D; co-author: Klaus Gram-Hansen, Gram & Juhl A/S, Vojens, Denmark	**S-Curve speed control for variable speed wind energy converters** ■ Overview: Types of speed wind energy converters ■ Speed control ■ Non-linear control ■ MPP-Tracking **Prof. Dr.-Ing. habil. Constantinos Sourkounis,** Head of Power Systems Technology and Power Mechatronic, University of Bochum, Germany
15:15	**Reliable and competitive gearbox design solutions for 3 to 6.15 MW wind turbines** ■ Progressive concepts of planetary gears ■ Optimized application of bearings ■ Increase of the operational availability **Dipl.-Ing. Jörg Litzba,** Department Manager, Gearing & Gearbox Component Technology, R&D Product Technology, ZF Wind Power Antwerpen, Belgium	**Improving the reliability of rotor blades through full life cycle management** ■ Successful contracting strategies ■ Sustainable production follow up and quality assurance management ■ Transportation and installation risk management ■ Effective inspection and maintenance during the operational period **Jaap Olthoff,** Quality Assurance Management, OUT Smart, JL Velp, The Netherlands	**Wind index and wind farm financing** ■ Usually applied wind and production index ■ Implementation of additional independent indexes based on reanalysis data ■ Influences on the energy yield probability **Dr. Heinz-Theo Mengelkamp,** Managing Director; co-authors: Dipl-Geogr. Joachim Geyer, Dipl.-Geogr. Lasse Blanke, anemos Gesellschaft für Umweltmeteorologie mbH, Reppenstedt, Germany	**Efficient fault detection & fault diagnosis on +4000 wind turbines using vibration monitoring** ■ The importance of choosing the most advantageous monitoring strategy ■ How to monitor more than 5 million alarm limits ■ The important role of the operator **Carsten Andersson,** Project Manager, Remote Monitoring Group, B&K Vibro, Nærum, Denmark	**Comparison of generator and converter drive train topologies for a 3 MW onshore turbine** ■ Different characteristics of generators: doubly fed, permanent magnet, cage induction ■ Important cost of energy calculations ■ Capital equipment investment calculations for volume production ■ Low voltage versus medium voltage **Dr. Ross Hall,** Global Applications Engineering Leader, Wind Platform Product Leader, Wind Generators, GE Power Conversion, Warwickshire, United Kingdom

Industrial Board

Ignacio Láinez Aracama, Director, Evaluación Energética en EDP Renováveis, Spain

Markus Becker, CTO, KENERSYS GmbH, Münster, Germany

Dr. Günther Berger, Vice President Development Renewable Energies, Bosch Rexroth AG, Witten, Germany

Stefan Franko, Director Renewable Energy, GE Power Conversion, Berlin, Germany

Ma Hongbing, General Manager, Goldwind Science & Technology Co., Ltd., Beijing, China

Jean Huby, Managing Director, AREVA Wind GmbH, Bremerhaven, Germany

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	Innovative Gearbox Design: Today and Tomorrow	**Future Rotor Blade Designs**	**Exact Wheather Forecasting Models and Operational Systems**	**Effective Vibration Monitoring**	**Electrical Components – Technologies for the Future**
15:45	**Verification process and results of a fully integrated two-stage gear and PMG combination** ■ Serviceability aspect as a part of the process ■ Essential measurement results **Kari Uusitalo, M.Sc.,** Product Manager Wind Gears, Moventas Gears Oy, Jyväskylä, Finland	**Material and component research for efficient rotor blade design** ■ Characterization of static and fatigue properties ■ Classified fatigue formulation and life calculation ■ Results from recent research projects ■ Full scale testing for validation of rotor blades **Tim Westphal, M.Sc.,** Research Scientist, Knowledge Centre WMC, Wieringerwerf, The Netherlands	**Production losses due to icing – Techniques for forecasting and site assessment** ■ WRF model and the Makkonen formula to model ice accretion ■ Using historical wind power production data to find an empirical function ■ Results from trials of forecasting production losses ■ The long-term variation of production losses due to icing **Magnus Baltscheffsky, M.Sc.,** Model Developer, Meteorologist; co-author: Stefan Söderberg, Ph.D., CEO, WeatherTech Scandinavia AB, Uppsala, Sweden	**On-site real-time load monitoring – The new standard for wind turbines** ■ Optimal sensor portfolio ■ From condition monitoring to load monitoring ■ Verified examples for load monitoring for damage prevention ■ Sensor technology and system structure **Johannes Domke, MBA, M.Sc.,** Business Field Manager for Renewable Energy; co-authors: Matthias Mörbe, Dr. Ralf Schmidt, Bosch Engineering GmbH, Heilbronn, Germany	**Electrical components in wind turbine drive trains – The coordinated system of generator and converter for high efficiency and maximum reliability** ■ Design concepts, functioning, comparison of different converter-generator concepts ■ Market-specific requirements: Full power converter & synchronous generator ■ Power outcome and grid support ■ Room for improvement: Optimization **Dipl.-Ing. Joachim Günther,** Renewable Energy Systems Technology, PCS Power Converter Solutions, Berlin; co-author: Dipl.-Ing. Ralf Hanauer, VEM Sachsenwerk GmbH, Dresden, Germany
16:15	Coffee and Networking Break, Visit to Exhibition				
	Increasing Reliability of Main Shaft Bearings Chairman: **Markus Becker,** CTO, KENERSYS GmbH, Münster, Germany	**Effective Reliability and Failure Analysis of Wind Turbines** Chairman: **Prof. Dr. Po Wen Cheng,** Endowed Chair of Wind Energy, Institute of Aircraft Design, University of Stuttgart, Germany	**Offshore Certification and Risk Analysis** Chairman: **Christian Nath,** Senior Advisor Wind Energy, Barsbüttel, Germany	**Innovative Technology for Vibration Control & Damping** Chairman: **Prof. Dr.-Ing. Andreas Reuter,** Managing Director,Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Bremerhaven, Germany	**Advanced Technology Developments in Grid Connection** Chairman: **Dr.-Ing. Kurt Rohrig,** Deputy Director, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Kassel, Germany
16:55	**Field measurements for main shaft bearings of wind turbines** ■ Newest experiences of real field measurements ■ Excessive motions – often proposed but never arise ■ Hypothesis: Stray current through main bearings causing failures **Olle Bankeström,** Programme Manager, AB SKF, Gothenburg, Sweden	**An optimal age-replacement policy for offshore blades with two-type damages** ■ Typical types of damages due to harsh marine environment ■ Icing – A special challenge for offshore wind turbine blades **Dr. Mahmood Shafiee,** Research Associate, Department of Mathematical Sciences; co-authors: Prof. Michael Patriksson, A/Prof. Ann-Brith Strömberg, Chalmers University of Technology, Gothenburg, Sweden	**How certification and due diligence contribute the profitability of offshore projects** ■ The role and relationship of type certification vs. due diligence ■ National and international contractual and regulatory requirements ■ Influences of the project certification on costs and benefits **Peter Maack,** Certification Expert; co-author: Ivan Cuenca, Head of Technical Due Diligence – Wind Services, Bureau Veritas Industry Services GmbH, Hamburg, Germany	**Overall vibration values for high-availability wind turbines** ■ Permissible overall vibration values ■ Specific improvements by multichannel vibration value monitoring ■ Evaluation of the 2nd committee draft of ISO 10816-21 **Dr. Edwin Becker,** Head of Service and Diagnostic Center; co-author: Dipl.-Ing. Johann Lösl, Managing Director, Service and Diagnostic Center, PRÜFTECHNIK Condition Monitoring, Ismaning, Munich, Germany	**Analysis of the grid code effectiveness of offshore wind farms** ■ Effectiveness and possible simplification of prevailing requirements for HVDC connection to the onshore grid ■ Steady-state and fault behavior investigation ■ Possible modification of existing grid codes towards a downsized steady-state reactive power supply **Dipl.-Ing. Moritz Mittelstaedt,** Research Assistant; co-authors: Dipl.-Wirt.-Ing. Andreas Roehder, Univ.-Prof. Dr.-Ing. Armin Schnettler, Department for High Voltage Technology (IFHT), RWTH Aachen University, Germany
17:25	**Challenges and opportunities in the prediction of rolling bearing performances** ■ Bearing life using miscellaneous models and concepts ■ Appropriate braking and driving contact forces of bearing torques ■ Precise risk prediction of cage and smearing damage ■ Experimental validation using large size bearings **Dr.-Eng. Luc Houpert,** Senior Scientist, Product Technology, Timken Europe, Colmar, France	**Typical changes of main bearing of older wind turbines** ■ Favored opportunities vs. existing risks: technical, economical and operational ■ Lessons learned from onsite repair ■ Recycling and repowering versus repairing and running **Dipl.-Ing. Patrick Biwer,** Assistant Manager, Renewable Energies & ERP, Department of Renewable Energies, SEO S.A., Luxembourg	**What are the game changing components that will optimize the maintenance process?** ■ The use of risk analysis ■ Efficient combination of process data with risk assessment tools ■ Maintenance process and its implementation **Dipl.-Ing. Saskia Greiner, M.Sc.,** Department for Environmental- and Biotechnolgy, University of Bremen, Germany	**The advantages of cork composites in noise & vibration mitigation** ■ Specific characteristics of cork structure ■ Benefits and use in application of cork composites ■ Advantages of strong lightweight composite structures ■ Cork composite vibration control materials in transmission and distribution equipment **João Fernandes, M.ME.,** Application Engineer; co-author: Antonio Coelho, M.CE., Director of R&D, Amorim Cork Composites, Mozelos VFR, Portugal	**Time for change? – Grid situation in Germany** ■ Challenges of grid connection from planning to feed-in ■ Grid connection planning & network calculation ■ Assignments and tasks to commissioning **Dipl.-Ing. Rainer Leskien,** Grid Connection for Wind Farms, Modelling and Design of electrical Equipment; co-author: Dipl.-Ing. Gudrun Sachs, Grid connection, Wind & Site, Construction, e.n.o. energy systems GmbH, Rostock, Germany
17:55	**Innovative test of lubricants at tapped thread HV-joints** ■ In-depth comparison of lubricant properties ■ HV – Type fastener ■ Optimal friction coefficient ■ Casting – The option of a tapped thread **Dipl. Ing. (FH) Ute Behrendt,** Structural Analysis & Composites; co-author: Dipl.-Ing. Christian Reimer, Mechanical Engineer for Structural Analysis and Bolted Connections, Suzlon Energy GmbH, Rostock, Germany	**Damage analysis and technical restoration in wind turbines** ■ Well-known types of damages: fire, soot, water, corrosives, oil, etc. … ■ Analysis, cases and samples of contaminations ■ Lessons learned to increase the lifetime of components ■ Implementation of successful preventing concepts **Torben Vard,** Technical Manager, AREPA Danmark A/S, Silkeborg, Denmark	**Risk assessment of offshore wind turbine systems** ■ Failure modes and effects analysis (FMEA) ■ A look insight: A comparative study based on the results of onshore against offshore wind turbines ■ How do utilities calculate costs? **Fateme Dinmohammadi,** Researcher, Department of Industrial Engineering, Islamic Azad University-South Teheran Branch, Teheran, Iran	**Adaptive control of the PMSG based drive train for active vibration damping** ■ Occurent torsional oscillations of direct-drive trains ■ Challenges of rotating with the optimal tip speed but suppress the torsional oscillation ■ Proven acceptance test of stability by the Lyapunov theory **Dr. Liang Chen,** Scientist, Drive and System Technology; co-author: Dr. Jan Wenske, Head of Department, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Bremerhaven, Germany	**Automated design of inter-array cable systems for large offshore wind farms** ■ Significant in-time reduction for manual and visual inspection ■ Re-verifications to reduce human errors significantly ■ Complex design solutions using the most significant comparator – the investment **Victor Sellwood, M.Eng., MBA, C.Eng. MIET,** Business Development Manager; co-author: Dr. Dusko Nedic, Executive Consultant, Siemens PTI, Siemens Transmission and Distribution Limited, Manchester, United Kingdom
18:25	**Challenges for main bearings in large size wind turbines and suitable design approaches for reliable and cost efficient solutions** ■ Proven concepts to increase the flexibility of large wind turbines ■ Dynamic transient effects of the loads and corresponding rolling and sliding behavior ■ New bearing solutions – Designed to withstand high dynamic load situations **Dipl. Ing. (FH) Wolfgang Losert,** CEO; co-author: Dipl.-Ing. (FH) Marc Reichhart, Project Engineer, EOLOTEC GmbH, Nuremberg, Germany	**Typical damages at on- and offshore wind turbines and their successful prevention** ■ What has already happened? (Un-) typical damages and their impact on the reliability of wind turbines ■ Why did it happen? (Un-) typical reasons and trigger ■ What is possible to do? Recommendations for design, specifications and quality assurance **Dipl.-Ing. Jürgen Holzmüller,** 8.2 Ingenieurbüro, Aurich, Germany	**Effective maritime collision analysis** ■ Certification of offshore wind turbines ■ Simulation of a maritime collision between ship and OWT ■ Hull-retaining configuration of the foundation structure ■ Explicit FE-analysis with ANSYS/LS-Dyna ■ Assessment of monopile and jacket structures **Dipl.-Ing. (FH) Bernhard Buchmeier,** Technical Expert; co-author: Dipl.-Ing. Björn Kramer, Energy & Technology, Component Engineering, TÜV SÜD Industry Service, Munich, Germany	**A Process for Data Driven Prognostics** ■ Estimation of the remaining useful life ■ Appropriate condition indicators (CIs) for gear fault detection, using the health indicator (HI) ■ Impressive demonstration of a gear fault run to failure test **Eric Bechhoefer, M.S., Ph.D.,** Chief Engineer, NRG Systems, Hinesburg – VT, USA	**Support of grid operation by wind farms and wind farm clusters** ■ The new role of wind farm clusters and virtual power plants ■ Necessary frequency and voltage control ■ Management of the occurrent congestion ■ Short-term prediction **Dr.-Ing. Kurt Rohrig,** Deputy Director, Head of Division Energy Economy and Grid Operation; co-authors: Sebastian Stock, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Kassel, Prof. Dr.-Ing. habil. Lutz Hofmann, Department of Energy Supply and High Voltage Engineering, Leibniz University Hanover, Germany
18:55	**End of conference day one**				
19:00	**Evening Reception** At the end of the first conference day we kindly invite you to our evening reception. Enhance your personal network and use the relaxed and informal atmosphere for deepening talks with other participants and speakers.				

Industrial Board

Volker Kendziorra, Managing Director, ENERCON Service Deutschland GmbH, Aurich, Germany

Frank V. Nielsen, COO, LM Windpower, Kolding, Denmark

Jörg Scholle, Executive Vice President, Head of Global Engineering & Product Line Management, Nordex SE, Hamburg/ Rostock, Germany

Stefan Tenbrock, CEO, Winergy AG, Voerde, Germany

Sven-Erik Thor, Head of Wind Research and Development, Business Division Asset Development, Vattenfall AB, Stockholm, Sweden

08:30 **Welcome and opening address**

08:40

Keynote speech: Securing the future of Renewables by Market Integration – View of a pan-European Utility & Wind Farm Operator
- Required solutions for the current misalignment between Renewables and the electricity market
- As a result: Renewables remain accepted and become financially sustainable
- Current issues of the market integration, the expectations towards the wind industry and potential measures for a reasonable integration

Dirk Simons, CFO, RWE Innogy, Germany

	Lecture Room Estrelsaal A/B	Lecture Room 1CC	Lecture Room Estrelsaal C1/C2	Lecture Room Paris	Lecture Room Estrelsaal C5/C6
	Advances in Drive Train Engineering	**New Concepts for a Sustainable Maintenance**	**Environment & Requirements for Offshore Wind Turbines**	**Solutions for Economic & Legal challenges**	**Energy Storage Systems for Renewable Energy**
	Chairman: **Prof. Dr.-Ing. Friedrich Klinger,** CEO, INNOWIND Forschungsgesellschaft mbH, Saarbrücken, in Cooperation with Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Bremerhaven, Germany	Chairman: **Prof. Dr.-Ing. Berthold Schlecht,** Director, Institute of Machine Elements and Machine Design, Technical University of Dresden, Germany	Chairman: **Prof. Dr. Po Wen Cheng,** Endowed Chair of Wind Energy, Institute of Aircraft Design, University of Stuttgart, Germany	Chairman: **Ignacio Láinez Aracama,** Director, Evaluación Energética en EDP Renováveis, Spain	Chairman: **Prof. Dr.-Ing. Michael Sterner,** Professor for Energy Storage and Energy Systems, Department of Electrical and Microsystems Engineering, University of Applied Sciences Regensburg, Germany
09:10	**Exclusive insight: Results of a concept study for a 12 MW offshore turbine** - Consideration of open or highly integrated drive train concepts - Selection criteria: Reliability, time to market, initial costs and life time costs - Result: Design of a wind turbine with feasible masses and acceptable load levels **Dipl.-Ing. (FH) Sebastian Schmitz,** Chief Engineer/Head of Design Department, R&D, Quality Insurance, Design Methodology; co-author: Dipl.-Ing. (FH) Sabrina Dankelmann, MECAL Wind Turbine Design B.V., Enschede, The Netherlands	**How much longer? – Assessment of the remaining service life with a reconstruction of endured loads** - Short-time load measurement - Extrapolation of load and operational data **Dipl.-Ing. René Kamieth,** Researcher; co-author: Prof. Dr.-Ing. Robert Liebich, Head of the Department of Construction, Micro- and Medicaltechnology, Technical University of Berlin, Germany	**Recent developments of transformer HVDC plus-technology for offshore applications** - HVDC plus transformer – The future offshore grid concept? - Electrical characteristics of offshore HVDC transformer - The most important challenge: Corrosion protection of offshore transformer **Dipl.-Ing. Andreas Reising,** Vice Technical Project Manager, Engineering Department; co-author: Uwe Rimmele, Head of the Mechanical Design Department, Siemens AG, Nuremberg, Germany	**Russia – The emerging market for wind energy in the east** - Substantial facts & figures - Considerable access requirements for manufacturer, supplier and operator - Chances & opportunities for a successful market entry **Igor Bryzgunov,** President, Russian Association of Wind Power Industry (RAWI), Moscow, Russia	**Rating the economics of Power-to-Gas (P2G) in energy portfolios** - P2G – Not a constitute storage but firstly a coupling capacitance between electricity and gas - Economic benefit results from arbitrage profits - Effects on a portfolio of different generators, storages, purchase and supply contracts **Christian Oertel,** Consultant, Energy Production Planning (EPP), ProCom GmbH, Aachen, Germany
09:40	**Direct drive vs. geared drive: Benefits and risks** - Technical requirements on maturity and readiness - Frequencies and root causes of gearbox failures - Dropout of electrical components - A question of perspective: Different aspects of costs and cost types **Dipl.-Ing. Jan-Bernd Franke,** Senior WTG Engineer, Project WTG Lead Engineer, Offshore Engineering Department, WTG Engineering Group; co-authors: Dr.-Ing. Friedrich Koch, Head of Offshore Engineering, Dipl.-Ing. Holger Berndt, Leader WTG Engineering Group, RWE Innogy GmbH, Hamburg, Germany	**Advantages by a reliable electrical failure mode analysis** - Typical generator and converter failures in wind turbines - Root causes and best practices - Extending the lifetime and optimizing the total lifecycle costs **Dr. Panu Kurronen,** Product Manager Standard Generators, The Switch, Vantaa, Finland	**Incipient movement of littoral sand under non-breaking waves** - Continuous modification of cross-shore profiles by suspended sediment transport - Identification of small scale intrawaves above ripples via measurement data simultaneously obtained from different techniques - Non-breaking waves based on gradient diffusion **Dr.-Ing. Alireza Ahmari,** Coastal and Geotechnical Expert, Technical Office Wind Energy (TOW), SGS Germany GmbH, Hamburg, Germany; co-author: Prof. Hocine Oumeraci, Leichtweiß-Institute for Hydraulic Engineering and Water Resources, Dept. of Hydromechanics and Coastal Engineering, Technical University of Braunschweig, Germany	**European renewable energy law: Looking for stability** - The impact of the economic crisis on the European legal framework for renewable energy - Divergent applications in the member states - The uncertain future of renewable energy after 2020 **Fabrice Cassin,** Partner, CGR LEGAL, Paris, France	**Modelling of energy storage systems for wind power** - Techno-economic feasibility study of energy storage systems in South Australia - Review of various mechanical, chemical and electrical energy storage systems - Modelling of battery storage for capacity firming - Innovative battery storage for output from off-peak to peak demand **Marija Petkovic, B.E., B.Com.,** Energy Coordinator, BOC Limited, New South Wales; co-authors: Professor Anthony Vassallo, School of Chemical and Biomolecular Engineering, University of Sydney, Australia, Paul Wootton, Service Line Leader, Renewable Energy GHD, Brisbane, Australia
10:10	**Critical evaluation of long-time measurements and measurement-based simulation of selected operating conditions** - Possibilities of a systematic evaluation of measurement data - Investigation of the decisive interactions between external applied loads and the resulting gearing and bearing forces - Measurement of operation loads to establish realistic load assumptions **Dipl.-Ing. Thomas Schulze,** Scientific Assistant; co-authors: Dr.-Ing. Thomas Rosenlöcher, Dipl.-Ing. Carsten Schulze, Department of Machine Elements and Machine Design, Technical University of Dresden, Germany	**Drive train failure investigation and monitoring** - Technical approach to drive train failure investigation and root-cause-analysis - Financial impact of a malfunction - Successful tools and methods to manage and understand these failures - Future actions and recommendations **Richard Smith,** OnSite Fleet Maintenance Manager, Romax Technology Limited, Nottingham, United Kingdom	**Key commercial and technical issues in EPC contracts offshore** - Contractual structure: Turnkey or multi-contract - Purchasing strategies - Risk allocator between employee and contractor - Warranty and liability implications **Dr. Christian Kessel,** Lawyer/Partner, Bird & Bird LLP, Frankfurt/Main, Germany	**Wind energy market in Romania: Opportunity or threat?** - Market development and current situation in the Romanian wind market - Experience from wind energy projects in Romania - Current opportunities and risks - Outlook on the future development **Dipl.-Ing. Stefan Chun,** General Manager; co-authors: Stefan Bauch, Head of Planning and Project Development, Andre Niederheide, Consultant, CUBE Engineering GmbH, Kassel, Germany	**Case histories of successful integrated energy storages into the grid** - The important role of storage systems in smart grids - Experiences in the utility scale application - Customer-oriented results to support numerous smart grid goals **Marco Antoniazzi,** Area Manager Renewable Energy, Equipaggiamenti Elettronici Industriali (EEI), Vicenza, Italy
10:40	Coffee and Networking Break, Visit to Exhibition				
11:20	**Challenges for electromechanical differential drives – Theory and practical experience** - Principle of an electromechanical differential drive combined with a medium-voltage synchronous generator - Challenges driven by both, grid and economics - Modelling and design approach - Verification through measurements **Dipl.-Ing. Markus Waldner,** Director, Analytical Calculation; co-author: Dipl.-Ing. Gerald Hehenberger, CEO, SET Sustainable Energy Technologies GmbH, Klagenfurt, Austria	**Best Practice Example: Successful management of O&M by wind farm owners** - Options after the end of warranty period - M3: Modular Maintenance Model - Critical resources: Independent service provider; spare parts; logistics; human resources - Relationship with wind turbine manufacturers and OEMs - Present situation and future challenges **Eduardo García,** Head of Central Maintenance, EDP Renováveis, Sevilla, Spain	**Guarantee of safe offshore operations as a must have for responsible wind farm operator** - Proactive measures to prevent accidents - Essential night working concepts for service operations - Proven people tracking concept for offshore wind farms **Dipl.-Ing. Thomas Russy,** Head of Operations Development, AREVA Wind GmbH, Bremerhaven, Germany	**Wind Energy Turkey: Opportunities in an emerging market** - A look insight the Turkish energy market - Special framework for wind energy - Do's and dont's for business in Turkey **Frank Severin Kaiser, MBA,** Market Research and Business Development Manager, German-Turkish Chamber of Industry and Commerce, Istanbul, Turkey	**Power-to-Gas 2.0** - Effective conversion of wind energy in chemical fuels - Successful integration in already existing infrastructures - New concepts of using offshore wind energy **Prof. Dr.-Ing. Michael Sterner,** Professor for Energy Storage and Energy Systems, Department of Electrical and Microsystems Engineering, University of Applied Sciences, Regensburg, Germany

Scientific Board

	Lecture Room Estrelsaal A/B	Lecture Room 1CC	Lecture Room Estrelsaal C1/C2	Lecture Room Paris	Lecture Room Estrelsaal C5/C6
	Testing and Simulations – New Approaches to realistic Load assumptions Chairman: **Dipl.-Phys. Florian Hanisch,** Vice President Engineering, Winergy AG, Voerde, Germany	**Efficient Diagnostic Techniques and Optimization Tools** Chairman: **Markus Becker,** CTO, KENERSYS GmbH, Münster, Germany	**Optimization of Offshore Wind Turbines: Loads & Costs** Chairman: **Prof. Dr.-Ing. Andreas Reuter,** Managing Director, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Bremerhaven, Germany	**International Wind Power Market Insights** Chairman: **Stefan Franko,** Director Renewable Energy, GE Power Conversion, Berlin, Germany	**Critical Aspects in Finance & Planning** Chairman: **Dr.-Ing. Kurt Rohrig,** Deputy Director, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Kassel, Germany
11:50	**New model-based software development** ■ Extension of operational processes and supervision of turbine operation ■ Extensive evolvement of a graphically modelled controller algorithm – from an early stage to a fully developed implementation model ■ Meeting the demands of traceability and verification activities **Dr.-Ing. Günter C. Keßler,** Project Engineer, Software Development; co-authors: Dipl.-Ing. Sebastien Christiaens, Team Leader, Dr.-Ing. Axel Schlosser, Manager, Electrics/Electronics, FEV GmbH, Aachen, Germany	**Design load exceedence due to rotor property issues** ■ Overview of possible rotor property issues along the production chain ■ Different methods for error detection ■ Examples of negative impact on wind turbine lifetime consumption ■ Verification methods to fulfill the design requirements **Dr.-Ing. Christoph Heilmann,** Head of Research and Development; co-author: Dipl.-Ing. Anke Grunwald, Managing Director, BerlinWind GmbH, Berlin, Germany	**Integral load assessment approach for an optimized support structure design** ■ Common load assessment process ■ Integral model set-up and project interfaces ■ ULS and FLS load reduction and benefits ■ Load path/case optimization by integral view **Dipl.-Ing. Sven Bicker,** Head of Offshore Engineering/Load Assessment, Deutsche WindGuard Offshore GmbH, Varel, Germany	**Future developments of the offshore wind energy in Germany – Wishful thinking or reality?** ■ Basic conditions in Germany ■ Overview of existing and planned offshore wind energy parks ■ Outlook: Future trends, opportunities and risks ■ Strategy options for market participants **Dirk Briese,** Managing Director & Head of Department, wind:research, trend:research GmbH, Bremen, Germany	**The Cretan wind farms: Estimating energy output in areas of complex terrain** ■ Multi-MW project developing ■ Wind resource evaluation in areas of complex terrain ■ Evaluation of a CFD-code in energy estimation **Dr. Dimitros Kanellopoulos,** Director; co-authors: Eleni Palaiolouga, Natural Resources Evaluation and Certification Department, Public Power Corporation Renewables S.A., Antiopi Gigantidou, Sector Islands Network Operation Department, Hellenic Electricity Distribution Network Operator S.A., Agia Paraskevi, Greece
12:20	**Effective durability test design and methods for wind turbine systems** ■ Failure modes and causal factors ■ Proven interdependencies and model verification ■ Lessons learned from other industries: Gleaned test acceleration methods from the automotive and aerospace industries **Glen C. Grenier,** BSEE, Principle Technical Consultant/Staff Scientist, Systems Integration Engineering (SIE); co-author: Bob Orange, System Engineer, MTS Systems Corp., Eden Prairie – MN, USA	**Early damage detection on rotor blades of wind turbines** ■ Overview and comparison of the current conditioning methods ■ Status quo in rotor blade monitoring ■ Demonstration of the utilization of natural frequencies for early damage and ice detection ■ Important damage types of rotor blades ■ Detection of rotor imbalances **Dr.-Ing. Dietmar Tilch,** Managing Director; co-author: Dr. Daniel Brenner, Head of Monitoring, Bosch Rexroth Monitoring Systems GmbH, Dresden, Germany	**Cost of energy reductions of offshore wind power plants** ■ Implemented rotor and sub-structure design – choices with ripple effects ■ The electrical driveline – from generator to grid connection ■ 40 year project design life – achievable with careful approach ■ Helicopter Access System – full integration reduces cost and downtime **Mikæl Jakobsson,** Co-Founder and Chief Operating Officer (COO), 2-B Energy, Hengelo, The Netherlands	**Onshore wind business health check** ■ Tough times or silver stripes at the end of the tunnel – status quo of onshore wind in a nutshell ■ Poor dogs and rising stars – leverage from onshore wind business opportunities ■ Lessons learned – typical pitfalls from doing business in emerging onshore wind markets **Alexander Weidenbach,** Senior Manager, Auditor, Transaction Services, KPMG AG, Hamburg, Germany	**Innovative wind covers: Making the unprotectable insurable** ■ Closing gaps in coverage: Innovative insurance solutions for the wind industry ■ Serial loss covers for comprehensive performance protection ■ Increasing expenses due to adverse weather conditions in offshore projects ■ Secure profit of wind investors in less windy years **Dr.-Ing. Mathias Hörmann,** Underwriter Special Enterprise Risks; co-author: Dipl.-Meteor. Ernst Bedacht, Corporate Insurance Partner SER – Green Tech Solutions, Munich Re, Munich, Germany
12:50	**How much testing do you need? – Different test rig designs for different testing requirements** ■ Finding the most favorable testing capabilities for product optimization ■ Analyzing detailed behavior of special specimen under most realistic conditions ■ Exclusive insights in existing multipurpose test rig designs, technologies and financial invests **Dipl.-Ing. (FH) Armin Diller,** Project Engineering, RENK Test System, Augsburg, Germany	**Life-time calculations of electro-mechanical sensors** ■ Overview: Conventional encoders ■ Imagine the weakest: Typical damages of bearings ■ Correction of the theoretical approach by the introduction of environmental influences ■ Application of the sensor **Wolfgang Weber,** Global Industry Manager Renewable Energy, Factory Automation, Pepperl+Fuchs GmbH, Mannheim, Germany	**Efficient organization of raw data for load analysis: A unified offshore framework** ■ Offshore data management ■ Best practice examples for verification of load measurements ■ Automated and comprehensible data processing ■ Operational test field data from "alpha-ventus" **Dipl.-Ing. Ursula Smolka,** Research Assistant; co-author: Prof. Dr. Po Wen Cheng, Head of the Department of Aircraft Design, Chair of Wind Energy (SWE), University of Stuttgart, Germany	**The prospects of wind in the future market of Brazil** ■ Specific legal issues ■ Facts & figures to be known ■ Investors welcome – Considerable access requirements for manufacturer, supplier and operator ■ Risks & Chances for a successful market entry **Joana Luz Tiago,** President, APROER – Energias Renováveis, Brasilia, Brazil	
13:20	Lunch and Networking Break, Visit to Exhibition				
14:35	**Assured reliability of bolted connections** ■ Qualtiy assurance through measurement ■ Proven life time reliability ■ Low cost of ownership **Rod Corbett, M.Sc.,** MIM, Managing Director, JamesWalker rotaBolt Ltd., Dudley, United Kingdom	**Solutions to design a smarter wind farm** ■ Rapid, cost-efficient, transformative wind energy technology – The Scaled Wind Farm Technology (SWIFT) facility ■ Proven controller to administer turbine control functions site-wide ■ Individual turbine control and coordination of entire wind parks for interaction studies **Ing. Vidar Grønås,** Energy Segment Manager Europe, National Instruments, Norge; co-author: Jon Berg, Sandia National Laboratories, Asker, Norway	**Offshore wind turbines and their sub-structures: A modular design approach to improve installation and commission offshore** ■ How? What? And when? – Detailed description ■ Critical evaluation of improvement potential ■ Best practice examples of implementation **Dipl.-Wirt.-Ing. Maria Eugenia Castelar Perez,** Project Engineer; co-authors: Dipl.-Wirt.-Ing. Laura Riepe, RWE Innogy GmbH, Hamburg, Dipl.-Ing. Ralf Schüttendiebel, REpower Systems AG, Osnabrück, Germany	**Wind Energy Market USA – Chances and Challenges** ■ Facts & figures about the wind energy boom in the past ■ Economic and legal market organisation requirements ■ Outlook and the customer-oriented comparison to European markets **Matthias Henke, MBA,** Director of German Operations, SgurrEnergy Ltd., Hamburg, Germany	

Lecture Room Estrelsaal A/B

15:15 

Keynote speech: Reducing the cost of energy in offshore wind power
■ Challenges of reducing the cost of energy while preparing to move into deeper waters
■ Technological advances needed to make offshore wind cost competitive
Lars Thaaning Pedersen, Vice President, Markets & Asset Management, DONG Energy Wind Power, Denmark

15:35 

Keynote speech: Development of Offshore Wind – a view from a project developer
Dipl.-Ing. Heiko Ross, Technical Director, Windreich AG, Germany

15:55 Panel discussion energy provider **"Which further expansion of wind energy in Europe is desirable?"**

Chairman:

Prof. Dr.-Ing. Michael Sterner, Professor for Energy Storage and Energy Systems, Department of Electrical and Microsystems Engineering, University of Applied Sciences Regensburg, Germany

Participants:

Dipl.-Ing. Heiko Ross, Technical Director, Windreich AG, Germany


Dirk Simons, CFO, RWE Innogy, Germany


Lars Thaaning Pedersen, Vice President, Markets & Asset Management, DONG Energy Wind Power, Denmark


Ignacio Láinez Aracama, Director, Evaluación Energética en EDP Renováveis, Spain

16:20 **End of conference**

WORKSHOP I
WIND RESOURCE ASSESSMENT
FROM MEASUREMENTS TO FINANCIAL REPORTS

Workshop Trainer:
Dr. Heinz-Theo Mengelkamp is the managing director of anemos Gesellschaft für Umweltmeteorologie mbH, a consulting company for environmental meteorology. He works in the wind power industry for more than 30 years and is a certified consulting meteorologist of the German and American Meteorological Societies. Mengelkamp is chairman of the working group for the development of the technical guideline TR6 for wind resource studies.

Target Group:
The workshop "Wind Resource Assessment – From Measurements to Financial Reports" is addressed to wind farm developers and owners, investors, consultants and everybody who aims to understand a wind assessment report.

Objective:
Wind resource assessment has become a specific science discipline. The European windatlas model WAsP has been the standard approach for site assessment studies for a long time. Complex terrain and hub heights well above 100 m require even more sophisticated methodologies. Advanced atmospheric mesoscale models and computational fluid dynamic codes (CFD) as well as global reanalysis data are standard options for resource assessment studies. In addition the estimation of yield reductions due to wind turbine operation restrictions receives increasing attention.

Learn more about the latest technologies and methods of precise estimation of wind potential and wind farm energy output. After the workshop you will be able to find the optimal strategy for a wind resource assessment at any particular site. Furthermore, after the workshop you will be able to "read" a site assessment report, evaluate the data and procedures applied and find the basis for commercial considerations. This workshop will explore the industry's needs, focus on state-of-the-art techniques and technologies and provide a critical insight into key matters by which we make our energy forecast.

Course outline:
09:00 a.m. to approx. 16:30 p.m.

Exact Wind Measurements
- Measurements according to international guidelines (Mast, SODAR, LIDAR)
- Continuous data collection and quality control
- Classified data analysis
- Consideration of possible uncertainties

Effective long-term correlation of wind data
- Reanalysis of the collected data and other long-term data sets
- Measure-Correlate-Predict method
- Recorded wind volatility

Spatial extrapolation of wind data
- Advances of the vertical extrapolation of measurements
- WAsP – the European Wind Atlas Method

CFD – Computational Fluid Dynamic Codes
- Forward-looking atmospheric mesoscale models

Energy output – Estimation and wake effects
- The Technical Guideline TR 6
- Profit losses due to restricted operation modes
- Uncertainty analysis and transgression probability
- Requirements for a site assessment report

Closing Remarks

The participants are invited to ask questions and present their cases for further discussion.

WORKSHOP II
LEGAL ASPECTS FOR THE SUPPLY AND CONSTRUCTION OF WIND FARMS (ONSHORE AND OFFSHORE)

Workshop Trainer:
Dr. Christian Kessel, LL.M. (London) is a partner of the international law firm Bird & Bird LLP in Frankfurt am Main, Germany and admitted as a Rechtsanwalt (lawyer) and as a solicitor in England and Wales. He has wide experience in the drafting and negotiation of complex corporate contracts (in particular in major projects) and general terms and conditions (commercial contracts) as well as corporate/M&A. One of his major areas is the renewable energies sector, in particular wind energy (offshore and onshore). He also advises on the relevant planning law and energy law issues. In the offshore wind sector he has been involved in some of the most important and high volume transactions in Germany. He also deals with legal issues relating to the construction of power supply/transmission lines and electricity interconnectors as well as the North Sea Supergrid. He is a member of the legal advisory board of the German Wind Energy Association (BWE) and advises the EU Commission on the harmonization of the European private law (CFR-net).

Target Group:
The Workshop "Legal aspects for the supply and construction of wind farms (onshore and offshore)" is addressed to service provider, energy provider, wind farm operator, consulting engineers, technical experts, financial institutions and insurances from all over the world. A legal background is not necessary.

Objective:
Knowing the typical features, risks and solutions in contracts for the set-up and installation of wind farms is the key to the successful implementation of such projects. An understanding of judicial basic knowledge opens up the possibility to avoid legal arguments and conflicts, which cause considerable follow-up charges. The awareness about legal consequences has a positive effect on the actions and decisions of the persons concerned, e.g. wind farm developers, their suppliers and contractors, subsuppliers and service providers.

In the workshop participants will receive an overview of legal general conditions of different countries and contractual aspects, which are relevant for the safe and successful design, construction and commissioning of wind farms. This topic is of special interest to wind farm developers and operators, suppliers and contractors active on an international basis. After the workshop the attendees are able to identify and classify the different kinds of contracts, legal risks and the requirements for their contractual coverage.

Course Outline:
09:00 a.m. to approx. 16:30 p.m.

1. Contractual structure: Supply contracts or EPC-contracts
2. Advances of standard form contracts (FIDIC, NEC etc.) or own drafts
3. The optimal formal structure of a contract
4. Successful purchasing strategies
5. Key commercial and legal issues
6. Special offshore issues
7. Sanctions for non-compliance: Penalties, liquidated damages, guarantees, caps
8. Occuring defects: Warranty or maintenance issues?
9. Cross-border issues: Which law shall govern, which "tribunal" shall decide?

Closing Remarks

The participants are invited to ask questions and present their cases for further discussion.

DON'T MISS THE POSTER PRESENTATIONS

In our exhibition area the poster presentations are prominently arranged. Here are several interesting technical innovations documented and introduced to the audience. Each poster will be supervised by a personal contact for further information. Have a look at the poster presentations at www.cowec.de.

ORGANIZER

The Association of German Engineers (VDI) is one of the largest technical-scientific associations in Europe and is recognized internationally as a key representative body both within the profession and among the general public. Drawing on the extensive know-how of the VDI, we have established one of the greatest European wind industry networks including leading manufacturers, suppliers, service providers, operators/planners, energy suppliers and other related stakeholders, as well as internationally renowned wind energy research scientists. Our portfolio of more than 100 successful events covering all important aspects of the wind energy sector is well known among industry professionals as the platform for decision makers in the sector. Our team of engineers, energy experts and marketing professionals is excited to combine our leading technical know-how with our event management experience to present this innovative, international conference and exhibition. We look forward to seeing you in Berlin in 2013!

BECOME AN EXHIBITOR OR SPONSOR

The industry exhibition which will be run at the same time as the conference will be a true highlight for all those present at COWEC 2013 in Berlin. It will be located prominently right in front of the conference rooms with the catering facilities nicely set up amidst the exhibition stands so that exhibitors can easily meet attendees from all over the world. The exhibition will be open throughout the conference. Conference attendees will be the only ones admitted to the exhibition – at no cost, of course. A total of 30 companies from home and abroad are invited to show their innovative solutions in wind power engineering in the foyer of the impressive Estrel Hotel and Convention Center. Don't miss this great opportunity to become an exhibitor and present your products and services effectively if you want to reach out to top-notch attendees and future clients at this conference! Target your promotional activities with maximum precision and concentrate on those who are really interested!

WHO SHOULD EXHIBIT?

The industrial exhibition at this conference will be dedicated specifically to the following sectors:
Wind turbine manufacturers • Components • Materials • Equipment manufacturers • Service providers • Consultancies • Maintenance providers • Operations onshore & offshore • Project developers • Utilities • Logistics • Installations • Insurances • Finance • Legal Services • Institutes • Associations

Contact

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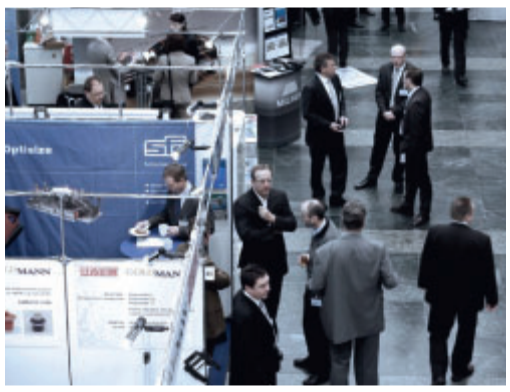

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WITH EXHIBITION

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An event organized by VDI Wissensforum GmbH
www.cowec.de

I SUPPORT COWEC BECAUSE ...

... this conference will bring together the whole wind engineering community, making it the perfect platform to present and discuss challenges related to technology, economics and operation and maintenance«
Sven-Erik Thor, Head Wind Research and Development, Business Division Asset Development, Vattenfall AB

... as the president of the board it gives me a great opportunity to discuss and share ideas with other board members, speakers and our numerous international participants. This is a global event that nobody in the wind industry should miss.«
Prof. Dr. Andreas Reuter, Managing Director, Fraunhofer IWES

... the VDI conference is an attractive new platform offering all participants the chance to exchange their views on latest technology trends in the wind industry.«
Stefan Tenbrock, CEO, Winergy AG

... being the co-president has given me a unique chance to work very closely with leading figures in the wind power industry to create an innovative program. I am confident that attendees will enjoy attending this conference as much as we did putting it all together.«
Dr. Andrew Garrad, President, GL Garrad Hassan

... it gives us the opportunity to develop our international business further, which is of great importance for a medium-sized manufacturer like Kenersys.«
Markus Becker, CTO, KENERSYS GmbH

COWEC

REGISTRATION

Please choose your price category:

EARLY BIRD until March 15, 2013	Participation Fee +VAT PRICE LEVEL 1	Personal VDI Members or members of the associated organisations +VAT PRICE LEVEL 2
VDI-Conference June 18–19, 2013 (02KO181013)	☐ € 1,290	☐ € 1,190
Package: Conference and one Workshop	☐ € 1,910	☐ € 1,860
	Workshop I June 20, 2013, Wind Resource Assessment ☐	Workshop II June 20, 2013 Legal Aspects ☐
Standard Price		
VDI- Conference June 18-19, 2013 (02KO181013)	☐ € 1,390	☐ € 1,290
Package: Conference and one Workshop	☐ € 2,010	☐ € 1,960
Parallel Workshops for individual booking		
Workshop I June 20, 2013 Wind Resource Assessment (02SE238001)	☐ € 870	☐ € 820
Workshop II June 20, 2013 Legal Aspects (02SE181002)	☐ € 870	☐ € 820

VDI membership no.

Name of the associated organisation

Title

First Name

Last Name (Family Name)

Department

Company/Institute

Street

ZIP Code City

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Phone Fax

Email

Please state your invoice address if this differs from the address given

Participants with an invoice address outside of Austria, Germany and Switzerland are requested to kindly pay by credit card:

☐ Visa ☐ Mastercard ☐ American Express

Card holder Valid until (MM/Y)

Cardno. Security Code

Date ✕ Your Signature

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TERMS AND CONDITIONS

Applications Applications for conference attendance must be made in writing. Confirmation of your registration and the associated invoice will be mailed to you. Please do not pay your conference attendance fee until you will have received our invoice and its invoice number to be stated for transfer.

Conference venue:
Estrel Hotel Berlin
Sonnenallee 225
12057 Berlin
Tel: +49 30 6831 0
Fax: +49 30 6831 2345
www.estrel.com

Hotel room reservation:
A limited number of rooms have been reserved for the benefit of the conference's participants at the Estrel Hotel Berlin until May 07, 2013
Sonnenallee 22
12057 Berlin.
Tel: +49 30 6831 0; Fax: +49 30 6831 2345
www.estrel.com.
Please refer to »VDI Conference«.

Office hours:
During the conference you can contact us at the following number: +49 30 6831 25301
Monday: 16:00 p.m. – 18:00 p.m.
Tuesday: 09:00 a.m. – 19:00 p.m.
Wednesday: 08:30 a.m. – 16:15 p.m,

VDI Wissensforum service package: The conference package includes the conference documents (online download), beverages during breaks, lunch and the social evening event on June 18, 2013. The workshop package includes the workshop documents (will be handed out onsite), beverages during breaks and lunch.

Conference attendance conditions and terms:
By way of your registration you accept the conference attendance conditions and terms of VDI Wissensforum GmbH as binding. Any cancellation of your registration must be made in writing. We will charge you only an administrative fee of € 50.00 plus German VAT if you cancel your registration earlier than 14 days ahead of the conference date. Any cancellation that reaches us after this deadline will entail the conference attendance fee as stated in our invoice to be charged in full. The date of the post office stamp of your written cancellation will be the decisive criterion. Subject to agreement, you may name a substitute participant. Individual parts and sections of conferences and seminars cannot be booked. You will be informed without delay if an event has to be cancelled for unforeseeable reasons. In that instance, you will be entitled only to a refund of your conference attendance fee if already paid. We reserve the right to exchange speakers and/or change the programme sequence in exceptional cases. In any case, the liability of VDI Wissensforum GmbH is restricted exclusively to the conference attendance fee.

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