



WWEC 2003

Presented by
The World Wind Energy Association
The African Wind Energy Association

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Cape Town, South Africa
23–26 November 2003

The World Wind Energy Conference and Renewable Energy Exhibition

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SESSION 1

09:00 — 10:30

PLENARY — OPENING SESSION**Opening Address***Dr Preben Maegaard, President, WWEA, Denmark***Opening Address***Prof. Galal Osman, President AfriWEA, Egypt***Official Opening of the Conference***South African Minister for Minerals and Energy, Phumzile Mlambo-Ngcuka (to be confirmed)***Welcome Addresses***Per Stig Moeller, Danish Foreign Minister (to be confirmed)
Rainer Hinrichs-Rahlwes, Director General, The Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany
Member of the European Parliament, Strasbourg***Welcome by the organiser***Peter Aspinall, SBS Conferences***Towards an Earth Charter for Renewable Energy***Dr Hermann Scheer, Member of the German Parliament, Alternative Nobel Prize winner, General Chairman of the World Council for Renewable Energy***BREAK**

10:30 — 11:00

SESSION 2

11:00 — 13:00

PLENARY — KEYNOTES**Wind for Africa***Hermann Oelsner, Darling IPP, South Africa***Renewable energy's contribution to clean development***Prof. Klaus Toepfer, UNEP (to be confirmed)***The World Bank's activities in sustainable development***Peter Woicke, Executive Vice President and MD, Private Sector Operations, World Bank***Report from City Energy Strategies Conference***Sarah Ward, Sustainable Energy Africa, South Africa***Capacity Building: creating a basis for wind energy utilisation***Klaus Knecht, InWent, Germany***Wind energy technology: status and future perspectives***Prof. James Manwell, University of Massachusetts, USA***The way to a sustainable hydrogen economy***Prof. Erico Spinadel, President, Argentine Wind Energy Association, Argentina***Wind energy — a sustainable business opportunity***Heinz Dahl, Renewable Energy Generators Australia (REGA)***LUNCH**

13:00 — 14:00

SESSION 3

14:00 — 15:30

GLOBAL MARKETS: AFRICA*Chairs: Galal Osman, African Wind Energy Association & Elvis Zekeri, Nigerian Wind Energy Association***Wind energy in South Africa: time to implement?***Jason Schäffler, IIEC Africa, South Africa***Policies for the future: spreading awareness of wind opportunities (North Africa)***Khalid Benhamou, MD Sahara Wind, Morocco***Wind energy in Libya***Mohamed Muntasser, International Energy Foundation, Libya***Wind energy applications in Eritrea***Enrique Rodríguez-Flores, Lahmeyer International GmbH, Germany***ESKOM's first wind energy experiences at Klipheuwel***Riaan Smit, Distribution, Eskom, South Africa***DISCUSSION****SESSION 4**

14:00 — 15:30

TECHNICAL ISSUES:**WIND ASSESSMENT AND PREDICTION***Chairs: Yukimaru Shimizu, Mie University & Frede Blaabjerg, Aalborg University***UNEP's Solar and Wind Energy Resource Assessment Programme***Tom Hamlin, UNEP, France (to be confirmed)***Wind energy mapping using a mesoscale atmospheric model and a global meteorological database***Matthias Mohr, St. Albans, United Kingdom***Wind data bank for the Southeastern Region of Brazil***Gustavo Bodstein, Universidade Federal do Rio de Janeiro, Brazil***Higher-order closure mesoscale modelling for wind climates***Hans Bergstrom, Uppsala University, Sweden***Optimization of Weibull Parameters using genetic algorithm elements and knowledge of the Brazilian regional characteristics***Vanessa Gonçalves Guedes, Electric Power Research Centre (CEPEL), Brazil***DISCUSSION****BREAK**

15:30 — 16:00

SESSION 5

16:00 — 18:30

GLOBAL MARKETS: EUROPE*Chairs: Wolfgang Palz, WCRE & Tanay Sıdkı Uyar, Marmara University***Pre-conditions for successful implementation of a wind energy industry in Europe***Heinrich Bartelt, MD German Wind Energy Association BWE, Germany***Development of wind power in Sweden and the Swedish Wind Energy Association's promotion of its extension***Gunnar Grusell, Vice President, Swedish Wind Energy Association (SVIF), Sweden***Role of renewable energies in a sustainable energy system — case study: Germany***Manfred Fishedick, Wuppertal Institute for Climate, Environment, Energy GmbH, Germany***Current situation & barriers to the promotion of wind power***Victor Elistratov, Saint Petersburg State Polytechnical University, Russia***DISCUSSION****SESSION 6**

16:00 — 18:30

TECHNICAL ISSUES:**WIND ASSESSMENT AND PREDICTION***Chairs: Federal University of Rio de Janeiro & Grigori Dmitriev, Russian Academy of Sciences***Wind assessment and prediction***Gustavo Bodstein, Federal University of Rio de Janeiro & Grigori Dmitriev, Russian Academy of Sciences***Assessment of wind resources in South Africa***Soren Gjerding, MD Tripod Wind Energy, Denmark***Using mesoscale-microscale modelling to assess Africa's wind resources***Michael Brower, TrueWind Solutions, LLC, USA***Online monitoring and prediction of wind power for transmission system operation centres***Kurt Rohrig, ISET, Germany***Mapping wind energy — current status in Chile***Miguel Mansilla, Universidad de Magallanes, Chile***Exploratory wind data analysis as a governing factor for local wind site design in Brazil***Maria Pereira de Araújo, Iberdrola Group, Brazil***DISCUSSION**

19:00

PLENARY PANEL DISCUSSION:**TIME TO IMPLEMENT RENEWABLE ENERGIES IN AFRICA — BUT HOW?**

SESSION 7

09:00 — 10:30

POLICY ISSUES: PLENARY — GLOBAL POLICY FRAMEWORKS*Chairs: Everaldo Feitosa, Brazil Wind Energy Association & Hermann Scheer, World Council for Renewable Energies***The Johannesburg Renewable Energy Coalition***Thomas Verheye, European Commission, Belgium (to be confirmed)***The International Conference for Renewable Energies in Bonn 2004***Norbert Gorißen, Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany***New Partnership for Africa's development: NEPAD's impact on energy policy***Smunda Mokoena, CEO of NEPAD, South Africa (to be confirmed)***Renewable Energy and Energy Efficiency Programme (REEEP)***Amal-Lee Amin, British High Commission***A complete renewable energy supply of an OECD country: simulation and political requirements***Harry Lehmann, Greenpeace International, Germany***The world-wide proliferation of renewable energies: an agenda to overcome the barriers in the international frameworks***Stefan Gsänger, WWEA, Germany***BREAK** 10:30 — 11:00**SESSION 8** 11:00 — 12:30**GLOBAL MARKETS:
AMERICA & AUSTRALIA***Chairs: Erico Spinadel, Argentine Wind Energy Association & Heinz Dahl, Renewable Energy Generators Australia***Canada's wind energy at present and in the future***Gilbert Parent, Ambassador for the Environment, Canada***Status of renewable energies in Cuba with special emphasis on wind energy***Conrado Moreno, CETER, Cuba***Brazilian Wind Energy Programme — recent developments and future prospects***Everaldo Feitosa, Universidade Federal de Pernambuco, Brazil***Mandatory renewable energy target legislation***Peter Rae, AO, Hydro Tasmania, Renewable Energy Generators of Australia (to be confirmed)***The US wind markets: status and perspectives***Paul Gipe, USA***DISCUSSION****SESSION 9** 11:00 — 12:30**TECHNOLOGY DEVELOPMENT:
TECHNOLOGY ADAPTATION TO
REGIONAL REQUIREMENTS***Chairs: Jens Soerensen, Technical University of Denmark, & Choong-Yul Son, Inha University***Optimum water pumping from wind energy***Michel Malengret, University of Cape Town, South Africa***Development and utilisation of small wind turbines in China***He Dexin, Chinese Wind Energy Association, China***Wind turbines and earthquakes***Uwe Ritschel, Windrad Engineering GmbH, Germany***Perspectives in re-using wind energy converters in developing countries***Carsten Ropeter, Technical University of Clausthal, Germany***Presentation of a German offshore wind energy project***Hans-Joachim Buehring, Amrumbank West GmbH, Germany***DISCUSSION****SESSION 10** 11:00 — 12:30**FINANCING***Chairs: Michael Eckhart, American Council for Renewable Energies & Heinrich Bartelt, German Wind Energy Association***Wind energy funds in Germany — specific requirements***Ulla Meixner, Reconcept, Germany***Trends for financing of wind energy projects***Edwin Feo, Milbank, Tweed, Hadley & McCloy LLP, USA***Decommissioning costs and liability reserve***Christof Schwarz, Consultant, Germany***Financing wind energy in third world countries***Dana Younger, IFC (to be confirmed)***DISCUSSION****LUNCH** 13:00 — 14:00

SESSION 11 14:00 — 15:30**GLOBAL MARKETS: ASIA**

Chairs: Sarvesh Kumar, Vestas RRB India, & Izumi Ushiyama, Ashikaga Institute of Technology

Policy and institutional issues for accepting wind energy on a large scale
Anil Kane, Chairman, Indian Wind Energy Association

Growing wind power development in Japan
Yukimaru Shimizu, Mie University, Japan

Wind energy programme of Korea for reducing greenhouse gases under the Renewable Energy Act
Choong-Yul Son, Inha University, Korea

Mongolian Wind Energy Programme
Baataryn Chadaar, Mongolian Renewable Energy corporation, Mongolia

DISCUSSION**SESSION 12** 14:00 — 15:30**TECHNICAL ISSUES: TECHNOLOGY DEVELOPMENT**

Chairs: Jürgen Schmid, ISET & Takao Maeda, Mie University

Condition monitoring of induction generators for wind energy conversion systems
Paul Barendse, University of Cape Town, South Africa

The development of a 5kW off-grid wind generator set
Chen Li, Aerodynamics Research & Development Center, China

Reactive power limit of variable-speed constant-frequency wind turbine
Hong Shen, China Electric Power Research Institute, China

Centralised lubrication systems in wind turbines reduce costs and increase key component lifetime
Patrick Saendker, Lincoln Lubrication, South Africa

Windside — a Finnish vertical-axis wind turbine
Timo Vekara, University of Vaasa, Finland

DISCUSSION**SESSION 13** 14:00 — 15:30**FINANCING**

Chairs: Frede Hvelplund, Aalborg University & Dana Younger, IFC (to be confirmed)

GEF's approach to finance wind energy projects in developing countries
Alan Miller, GEF, USA (to be confirmed)

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

Legal aspects of the Clean Development Mechanism in developing countries
Johan van den Berg, South Africa

The role of carbon finance in wind project development
Philip Doyle, Econergy International Corporation, USA

Emissions credits and wind energy development in Brazil
Andre de sa Leal, Ecoinvest Assessoria Ltda, Brazil

DISCUSSION**BREAK** 15:30 — 16:00**SESSION 14** 16:00 — 18:00**POLICY ISSUES: PROMOTION INSTRUMENTS & FRAMEWORKS**

Chairs: Dieter Holm, SESSA / ISES & Rainer Hinrichs-Rahlwes, Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany

Policy options for wind energy in South Africa
Harald Winkler, University of Cape Town, South Africa

A comparison of feed in and certificate models
Frede Hvelplund, Aalborg University, Denmark

Reference revenue model in Germany's feed in law
Johannes Lackmann, German Renewable Energy Association, BEE

Evolving environmental regulations for wind power projects in the Philippines
Esperanza Castro-Lee, PNOG Energy Development Corporation, Philippines

DISCUSSION**SESSION 15** 16:00 — 18:00**TECHNICAL ISSUES: TECHNOLOGY DEVELOPMENT — AERODYNAMICS**

Chairs: Jens Larsen, KMEK & He Dexin, China Aerodynamics R & D Centre

Full-scale aerodynamic effects of solidity and blade number on small horizontal axis wind turbines
Kenneth Visser, Clarkson University, USA

The effect of local inflow angle, cross & parallel on the section performance of a rotor blade
Takao Maeda, Mie University, Japan

Load reductions on HAWTs using smart flaps
Benjamin Marrant, Delft University of Technology, Holland

Design and manufacturing of a low wind speed 1kW turbine blade
Johannes Bosman, Potchefstroom University, South Africa

DISCUSSION**SESSION 16** 16:00 — 18:00**TECHNICAL ISSUES: GRID INTEGRATION**

Chairs: Nico Beute, Cape Technikon & Martin Hoppe-Kilpper, ISET-Kassel

Impact of wind generation resources on power grid supplemental energy and regulation reserves
Yuri Makarov, California Independent System Operator, USA

Implementation of wind turbines in weak grids
Åke Larsson, ÅF-industri & System AB, Sweden

Variable wind speed generator models for power system stability
Markus Pöller, DIGSILENT GmbH, Germany

Plugging wind into the grid — California Independent System Operators (ISOs)
Randall Abernathy, Vice President Market Services, California ISO, USA

A new approach to micro-grid implementation
Frank Spencer, University of Cape Town, South Africa

DISCUSSION**POSTER SESSION** 18:00 — 19:00**GALA DINNER** 19:30 for 20:00

programme is subject to possible changes pending confirmation from certain speakers

SESSION 17

09:00 — 10:30

POLICY ISSUES:**LOCAL/REGIONAL BENEFITS AND ACCEPTANCE***Chairs: Johannes Lackmann, BEE & Sarah Ward, Sustainable Energy Africa***Harvesting the wind — community case study in rural Alberta**
*Susan Aris, Canadian Wind Energy Association, Canada***Use of wind power in area destined for land reform**
*Ana Castro Lacorte, Energias Renováveis do Brasil Ltda, Brazil***Shewula community wind project — a project with direct and long lasting community benefits***Jonathan Curren, Sustainable Energy Solutions, Swaziland***The SA policy context for renewable energy development and civil society contributions to the policy debate***Richard Worthington, Sustainable Energy and Climate Change Partnership, South Africa***Improving rural livelihoods through renewable energy provision**
*Dorothy Manuel, ZERO Regional Environment Organisation, Zimbabwe***DISCUSSION****SESSION 18**

09:00 — 10:30

SPECIALISED APPLICATIONS:**HYDROGEN/WATER PRODUCTION***Chairs: Ibrahim Togola, Mali-Folkecenter & Mathieu Koumoin, UNDP***A zero-emission autarchic energy supply for communities in rural areas***Frank Menzl, FH Stralsund, Germany***Wind-produced hydrogen exported from Patagonia**
*Erico Spinadel, Argentinean Wind Energy Association, Argentina***Proposal of an isolated wind-hydrogen system for the Martín García Island***Florencio Gamallo, University of Buenos Aires, Argentina***Production of potable water by a wind-driven seawater desalination plant***Ulrich Plantikow, GWM mbH, Germany***Swedish desalination system based on wind energy**
*Åke Larsson, AF-industri & System AB, Sweden***DISCUSSION****BREAK 10:30 — 11:00****SESSION 19**

11:00 — 12:45

PRIVATE SECTOR: SUCCESS STRATEGIES FOR WIND ENERGY ENTERPRISES*Chairs: Ian Lloyd-Besson, Australian Wind Energy Association & Tulsi Tanti, Suzlon, India***Ways to become a renewable energy Independent Power Producer in South Africa***Hermann Oelsner, Darling IPP, South Africa***The first private independent energy producer in Russia**
*Grigori Dmitriev, Vetro Energy, Russia***Local manufacturing of components for wind energy converters**
*Reimund Ruethlein, a&f Stahl- und Maschinenbau GmbH, Germany***Wind power market and policy in energy sector of Russia**
*Sergey Kulagin, JSC Energy Group, Russia***From fossil to wind: significant opportunities for clean & competitive energy production in Mongolia***Ts Boldbaatar, Mongolia Links Co. Ltd., Tokyo***DISCUSSION****SESSION 20**

11:00 — 12:45

SPECIALISED APPLICATIONS: HYBRID TECHNOLOGY*Chairs: Frank Menzl, FH Stralsund & Thomas Harms, University of Stellenbosch***Wind-Solar hybrid system for water pumping — a perspective for countries in the Sahel, West Africa***Ibrahim Togola, Mali-Folkecenter, Mali***Small wind-photovoltaic hybrid systems for isolated areas**
*Jose Ramón Zugadi García, Fundación Fatronik, Spain***Commercialisation of Swedish wind hybrid technology**
*Åke Larsson, AF-industri & System AB, Sweden***Wind power for offgrid-applications in Africa**
*Krishna Raghavan, International Energy Consultant, India***DISCUSSION****LUNCH 12:45 — 14:00****SESSION 21**

14:00 — 16:30

CAPACITY BUILDING: DISSEMINATION OF INFORMATION AND TECHNOLOGIES*Chairs: Stefan Cramer, Heinrich Boell Stiftung & Dai Huizhu, Electric Power Research Institute, China***German-Argentinean joined experience in capacity building**
*Erico Spinadel, President Argentinean Wind Energy Association***Renewable Energy Centres network to raise public awareness**
*Jane Kruse, Folkecenter for Renewable Energies, Denmark***GTZ's TERNA Programme to promote the utilisation of wind energy**
*Jens Drillisch, GTZ, Germany***Renewable energy & its compatibility with Native American values**
*Ken Bradley, JustEnergy, USA***DANIDA's activities to promote renewable energies in Africa**
*Danida, South Africa***InWent's formation and training activities: opening tracks for wind energy in developing countries***Dario Schultz, Brazil***German activities to disseminate renewable energy technologies**
*Markus Kurdziel, Dena, Germany***DISCUSSION****SESSION 22**

14:00 — 16:30

SPECIALISED APPLICATIONS: OFFGRID AND STAND-ALONE SYSTEMS*Chairs: Arturo Kunstman, Universidad de Magallanes & Theo von Backström, University of Stellenbosch***System design and implementation of a remote wind power system***Åhmad Hourri, Lebanese American University, Lebanon***High speed PM Halbach motor, using odd numbers of discrete magnets for kinetic energy storage***David Johnson, University of Cape Town, South Africa***Improving the operation and maintenance of a pilot 150 kW wind turbine generator on Layang-Layang Island, Sabah, Malaysia***Zamani Bin Hamzah, TNB Research Sdn. Bhd., Malaysia***Resources of stand-alone energy-supply stations in decentralized areas: a pilot plant***Andreas Lietzmann, BTF GmbH, Germany***DISCUSSION****CLOSING CEREMONY / CONFERENCE SUMMARY / AWARDS 16:30 — 18:00****END 18:00**

