



Energy & Meteorology

WEATHER & CLIMATE FOR THE ENERGY INDUSTRY

Pre-Conference Seminar Speakers



Dr Laurent Dubus, *Electricité De France (EDF), France*

Dr Laurent Dubus is an engineer in marine environment and holds a PhD in Physical Oceanography from the University of Brest (France). After two years of postdoctoral research in physical oceanography, he joined EDF R&D in 2001 as a research engineer in the Applied Meteorology and Atmospheric Environment Group. He is now an Expert Research Scientist and Project Manager. He developed skills and experience in climate system modelling, weather and climate forecasts and electrical systems management. His activities particularly concern the improvement of the way in which weather and climate data and forecasts can be used in the power sector to better manage electrical systems on all time scales from a few days to several years.



Dr Ian Grant, *Australian Bureau of Meteorology, Australia*

Ian Grant gained BSc (Hons) and MSc degrees from the University of Melbourne, and a PhD from La Trobe University. After postdoctoral work in Canada, he joined CSIRO Atmospheric Research in 1995 to commence research in the remote sensing of radiation at the land surface. In 2003 Ian joined the Bureau of Meteorology, where he is now responsible for maintaining and developing software for terrestrial satellite applications. His recent work includes solar resource mapping to support the renewable energy industry, and a Bushfire CRC project to develop satellite-based monitoring of grassland drying for use in bushfire management.



Dr Sven-Erik Gryning, *Risø National Laboratory for Sustainable Energy, Denmark*

Dr Sven-Erik Gryning, has more than 20 years experience in boundary layer meteorology. He has extensive experience in management of large international projects such as the Øresund-experiment, a NORDFORSK funded project, and he was chairman for the management Committee for the NOPEX experiment, a large meteorological/hydrological experiment within the GEWEX framework. He is a member of the BALTEX Science Steering Group (BSSG) since 2002. BALTEX is dealing with the Baltic Sea in accordance with the general structures of GEWEX and other projects within the WCRP and ESSP. He is on the editorial board of several international journals including being Associate editor of the Quarterly Journal for the Royal Meteorological Society 2002-2007. He received his master and PhD from the Technical University in Denmark and is a Doctor of Science from Copenhagen University. He has been awarded the NATO CCMS price for outstanding leadership. His recent scientific interest is on wind energy, mainly devoted to the analysis of wind profiles both over land and off-shore.



Dr Sue Ellen Haupt, *NCAR, USA*

Dr Sue Ellen Haupt recently joined the Research Applications Laboratory of NCAR as Scientific Program Manager for Renewable Energy. She previously headed the Department of Atmospheric and Oceanic Physics at the Applied Research Laboratory of The Pennsylvania State University where she still holds the rank of Senior Scientist and Professor of Meteorology. She earned her Ph.D. in Atmospheric Science from the University of Michigan (1988), M.S. in Mechanical Engineering from Worcester Polytechnic Institute (1984), M.S. in Engineering Management from Western New England College (1982), B.S. in Meteorology from Penn State (1978), and did a postdoctoral fellowship with the Advanced Study Program of the National Center for Atmospheric Research in Boulder, CO. Dr. Haupt is an expert in boundary layer meteorology, large scale atmospheric dynamics, dynamical systems, numerical methods, artificial intelligence methods, and computational fluid dynamics. Her specialty is in applying novel numerical techniques to problems in the environmental sciences in both basic and applied research.



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Dr Jack Katzfey, *Commonwealth Scientific and Industrial research Organisation (CSIRO), Australia*

Jack was born in Wisconsin, USA and received a Master's in 1978 and PhD in 1983 in Meteorology from University Of Wisconsin-Madison, with an interest in synoptics and dynamics. He taught meteorology at the State University of New York-Oswego from 1982-1984 and then worked at the Geophysical Fluid Dynamics Laboratory, Princeton, New Jersey from 1984 to 1990, learning about computer models of the atmosphere. Since 1990, Jack has worked with CSIRO in Melbourne, Australia, with a primary focus on running and analysing regional climate model simulations for Australia and elsewhere. One of his more interesting projects

was providing high-resolution wind forecasts for the Swiss America's Cup team, Alinghi, helping them win in 2003 and 2007. He is now involved in providing high-resolution climate change simulations for the Asia-Pacific region.



Mr Ian Muirhead, *Bureau of Meteorology, Australia*

Ian Muirhead undertook a Master of Environmental Studies at Melbourne University, where his thesis studied the potential for large-scale wind power generation in Victoria. After 13 years working in remote area power systems design at Telstra Research Laboratories, Ian joined the Bureau of Meteorology in 1998. He is currently managing product development for the Bureau's Climate Data Online project, but is actively involved in helping develop the Bureau's renewable energy activities within the Bureau.



Prof Roberto Schaeffer, *Federal University of Rio de Janeiro, Brazil* - Sponsored by ESMAP

Prof. Roberto Schaeffer teaches and conducts research in the Energy Planning Program of the Federal University of Rio de Janeiro, Brazil, where he currently holds an Associate Professor position in Energy Economics. He holds a Ph.D. in Energy Management and Policy from the University of Pennsylvania (USA), a M.S. in Energy Planning from the Federal University of Rio de Janeiro, and a B.S. in Electrical Engineering from the Federal University of Paraná. His main interests are in the fields of energy efficiency, renewable energy and global climate change. Dr. Schaeffer has already supervised more than 80 masters and Ph.D. theses and published more than 100 scientific papers in the fields of energy and the environment. Previously to his

current professional position in the Energy Planning Program, he was, for two years, a Visiting Professor at the Centre for Energy and the Environment, and a Lecturer at the Wharton School, both at the University of Pennsylvania. Dr. Schaeffer has been contributing to the Intergovernmental Panel on Climate Change (IPCC) reports and assessments since 1994 as both Lead-author and Coordinating-lead-author. Currently he is a Coordinating-lead-author of the chapter on 'Mitigation Costs and Potentials' of the upcoming IPCC Special Report on Renewable Energy (SRREN), to be delivered by 2011, and a Coordinating-lead-author of the chapter on "Transportation" of the also upcoming IPCC Working Group 3 Fifth Assessment Report (AR5), to be delivered by 2014. Dr. Schaeffer is also Associate-editor of the two British scientific journals *Climate Policy* and *Energy-The International Journal*.



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Keynote Speakers

We are honoured to host the following Keynote Speakers:



Dr Pierre Audinet, *Energy Sector Management Assistance Program (ESMAP), World Bank, USA*

Dr Pierre Audinet leads the Clean Energy Program of ESMAP, the Energy Sector Management Assistance Program of the World Bank. He is a Team Leader with twenty years experience advising governments, formulating policies and preparing investment projects that have expanded sustainable energy supply in more than 30 countries across Asia, Europe, Middle East, North Africa and the Americas. Pierre's strengths include: strong expertise in energy policy, energy economics and project finance with an emphasis on electricity and renewable energy. Pierre joined the World Bank in 2004 to manage energy sector dialogue and to develop a wide range of energy investment operations in the Middle East, North Africa and Latin America. Prior to

joining the Bank, Pierre was a Senior Policy Analyst with the International Energy Agency.



Dr Subho Banerjee, *Department of Climate Change and Energy Efficiency, Australia*

Subho Banerjee took up his position as Deputy Secretary of the Adaptation, International and Regulatory Group at the Department of Climate Change and Energy Efficiency (DCCEE) in April 2011. Prior to DCCEE, Subho led the Strategy and Delivery Division at the Department of the Prime Minister and Cabinet. The Division was set up to strengthen the strategic policy capability at the centre of government, and works on government priorities spanning economic, social and environmental policy. Subho's previous career in the Australian Public Service has covered periods in the Treasury and the Australian Greenhouse Office. He

has also served as an economic policy advisor to the Hon Bob McMullan, MP; helped to set up the Cape York Institute for Policy and Leadership for Mr Noel Pearson; and worked as a management consultant to public and private sector clients at the Boston Consulting Group. Subho has a BSc and PhD in physics from the Australian National University. He subsequently studied economic and social history and environmental policy at the University of Oxford, where he was a Rhodes Scholar.



Dr Peter Coppin, *Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia*

Dr Peter Coppin received the BSc (Hons) degree in 1974 and a PhD degree in micro-meteorology from Flinders University, Australia in 1978. After completing a post-doctoral fellowship in wind energy at the University of Hannover, Germany, he was appointed as a Research Scientist at CSIRO in 1980. He was Director of the CSIRO Wind Energy Research Unit until 2009 and is currently Leader of the Storage for Renewables Stream at the Energy Transformed Flagship. His research interests include boundary-layer meteorology, wind energy and renewable energy storage.



Mr Peter Cowling, *GE Asia-Pacific, Australia*

Mr Peter Cowling leads GE's Sales team for Renewable Energy generation systems in the Asia-Pacific region. In this new role, Peter is responsible for selling GE Renewable Power Plant Solutions, incorporating wind turbines and thin film solar panels, as part of GE's broader Power and Water business. Peter recently joined GE after nine years in the wind industry in Australia and New Zealand. His background is in Law, and he holds law and history degrees from Melbourne's Monash University. Peter has also been a Commercial Manager in the construction and property sectors before seeking out opportunities in the renewable

energy industry. During his career, he has been involved in contracting and delivering over 1000MW of wind power plants. Peter has also been a board member of the Australian Wind Energy Association, and its successor body, the Clean Energy Council. He is an enthusiastic advocate of renewable energy and energy efficiency as an essential part of a low carbon future.



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Prof John Dutton, *Prescient Weather Ltd and The World Climate Service, USA*

Prof. John Dutton holds BS, MS and PhD degrees from the University of Wisconsin-Madison and served for three years as an officer in the Air Weather Service of the US Air Force. He is President of Prescient Weather Ltd with operations focused on managing weather and climate risk. John is also the Chief Executive of the World Climate Service which is a joint venture between Prescient Weather and MeteoGroup in Europe. He is Professor of Meteorology Emeritus and Dean Emeritus at the Pennsylvania State University's College of Earth and Mineral Sciences.



Mr Mersie Ejigu, *Partnership for African Environmental Sustainability, Uganda*

Mr Mersie Ejigu is the founder and Executive Director of the Partnership for African Environmental Sustainability (PAES). His background includes: Senior Fellow at the Foundation for Environmental Security and Sustainability (FESS); Visiting Professor of Environmental Security and Sustainability at the UN University for Peace; Assistant Director General for programmes and policy of IUCN – The World Conservation Union, Gland, Switzerland. In his home country, Ethiopia, Mersie served as Minister of Planning and National Development as well as Minister of Agriculture and Natural Resources. As Minister of Planning, he guided, coordinated and managed the formulation of Ethiopia's annual, medium term, and long-term development plans and the annual development budget. He also initiated and spearheaded the formulation of national development, food security, population, environment and investment policies and strategies. Trained in agricultural economics and macroeconomics at Alemaya College of Agriculture, Ethiopia, and University of British Columbia, Canada respectively, Mersie Ejigu has extensively written on wide ranging issues, including sustainable development strategies, poverty and environment, environmental security, and bioenergy.



Mr Tim George, *Australian Energy Market Operator (AEMO), Australia*

Mr Tim George joined AEMO in March 2009 as Executive General Manager, Planning after several years as GM Grid Development with Transpower in New Zealand. A professional engineer with an MSc in electrical engineering, Tim is originally from South Africa. He began his engineering career in Namibia before moving to Australia in 1982. He has worked in the Australian electricity transmission sector for over 25 years, including with the State Electricity Commission of Victoria, Powerlink in Queensland, the Victorian Power Exchange and NEMMCO. The AEMO Planning role encompasses both gas and electricity networks and includes the production of Gas and Electricity Statements of Opportunity, an Annual Planning Review for Victoria and the National Transmission Network Development Plan (NTNDP) for the National Electricity Market (NEM).



Prof V.V.N. Kishore, *Centre for Energy and Environment, TERI University, New Delhi, India*

Sponsored by ESMAP

Prof. V.V.N. Kishore is a Chemical Engineer by training. After graduating from Andhra University, he started working in renewable energy technologies in 1978, first at I.I.T. Kanpur and later at CSMCRI Bhavnagar. He joined The Energy and Resources Institute in 1984 and over a span of three decades, he has acquired extensive experience in the broad area of renewable energy utilisation, covering basic research, product/process development, field testing, technology transfer, execution of turnkey projects, policy research, consultancy, training and capacity building, and teaching. His current activities include study of distributed power generation systems, high performance biomass cook stoves, high rate bio-methanation, lignocellulosic ethanol, passive building design and solar thermal systems. He has eight books, 160 publications in journals/conference proceedings, numerous reports, 30 products/end-use packages, and eight patents to his credit. He was a visiting fellow at Kennedy School of Government, Harvard University, USA and a consultant for the World Bank and for Winrock International, Washington. He is currently the Program Director for the National Renewable Energy Fellowship (NREF), program of the Ministry of New and Renewable Energy (MNRE).



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Mr Shianti Majithia, *Energy and Climate Advisory (ex National Grid), United Kingdom*

Mr Shanti Majithia is a fellow of the Royal Statistical Society and Royal Meteorological Society with extensive experience in the energy industry and climate change adaptation. He headed the UK National Grid's Energy Forecasting Department and had responsibility for delivering a climate adaptation programme as Energy and Climate Strategy Manager. Mr Majithia was instrumental in bringing together the major UK energy companies to generate a ground-breaking study on climate change. The project set out to establish the effect climate change would have on industry infrastructure and business, with a view to translating the climate science for practical business application. Mr Majithia has been a leading stakeholder for the internationally-published Engineering and Physical Sciences Research Council (EPSRC) projects on Climate Change. He has for a number of years worked closely with a range of government agencies and has been an active contributor to a range of research papers over the last 25 years. Notable contributions include a chapter in the publication Power engineering series 22 Artificial Intelligence Techniques in Power systems and a CIGRE paper on Application of Modelling Techniques, to assess geomagnetically induced current risks on the NGC transmission system.



Mr Andre Martin, *Swiss Re, Australia*

Andre is a Senior Underwriter for Swiss Re Corporate Solutions in Sydney and responsible for the origination and underwriting of Engineering & Construction insurance in Australia and New Zealand. With his technical background in the power sector, a particular focus of Andre's is the origination and structuring of non-traditional or parametric risk solutions in the energy and weather space. Andre joined Corporate Solutions in January 2011 after having managed Swiss Re's Reinsurance Engineering and Construction portfolio within Australia and New Zealand since 2007. Before moving to Australia in 2006, Andre was based at Swiss Re's Headquarters in Zurich and responsible for technical re/insurance business in the Middle East, Turkey and India. Prior to joining Swiss Re in late 2002, Andre worked as a management consultant for Accenture in the area of risk management for deregulated energy markets in Europe. Andre began his career as an Engineer with ABB / Alstom Power working from 1995 – 2001 in various technical and commercial positions around power generation. Andre holds an MSc in Mechanical Engineering from the Federal Institute of Technology in Zurich (ETH Zurich) and an MBA in International Management from the University of South Australia (UniSA).



Mr Keith Parks, *Xcel Energy Services, Inc., USA*

Mr Keith Parks is currently a Senior Analyst with Xcel Energy Services, Inc. Xcel Energy is the largest provider of wind energy and the fifth largest combined electricity and natural gas utility in the United States. Keith manages grid integration of over 4.2GW of installed wind energy across eight States (Texas, New Mexico, Colorado, North Dakota, South Dakota, Minnesota, and Wisconsin). He is an expert in renewable integration cost calculation and mitigation strategies. He holds a BE from the University of Auckland in New Zealand. Before this, he held positions with the National Renewable Energy Laboratory (NREL) and energy consulting firms specialising in electricity energy modelling, resource planning, and grid operations.



Mr Neil Plummer, *Bureau of Meteorology, Australia*

Mr Neil Plummer is currently Assistant Director, Climate Information Services with the Bureau of Meteorology based in Melbourne. Neil joined the Bureau in 1986 as a weather forecaster. He has held positions on various World Meteorological Organization expert teams and management committees and has been a coordinating author with the Intergovernmental Panel on Climate Change. In 2008 he joined the world of hydrology as Manager Extended Hydrological Prediction before taking up his current position.



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Mr Giovanni Pirovano, *Ricerca sul Sistema Energetico, Italy*

Mr Giovanni Pirovano received his Degree of Electrical Engineering from the Polytechnic of Milan (Italy) in 1987. From 1988 to 1999 he worked with ENEL Research and from 2000 to 2005 in CESI S.p.A. Since 2006 he has been working in RSE SpA (Ricerca sul Sistema Energetico), a publicly-owned company carrying out R&D activities along the entire value chain of electricity. His main field of interest is electricity technologies, with special reference to "Asset Management" of the electrical grid. In particular Giovanni Pirovano is very active in research and standardisation activities of power transmission lines within the main national and

international bodies. He has a number of assignments across these networks and is author or co-author of more than 50 scientific papers published at national and international level.



Dr David Renne, *National Renewable Energy Laboratory (NREL), USA* - Sponsored by Sustainability Victoria

Dr David Renne is the principal Project Leader for analysis at the US Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) where he develops and manages programmes on renewable energy resource assessment and analysis. He also manages DOE's Solar Resource Assessment activities funded under the Solar Energy Technologies Program. Some of his recent work at NREL has been for international organisations such as the US Agency for International Development and the United Nations Environment Program (UNEP). In these programmes, he has managed solar and wind energy resource

assessments and the development of Geographical Information Systems tools for countries in Asia, Central America, South America and Africa. In addition to his role at NREL, David is the current President of the International Solar Energy Society (ISES). He received his master's degree and PhD from Colorado State University in Atmospheric Sciences and Earth Resources.



Dr Beverley Ronalds, *Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia*

Dr Beverley Ronalds is Group Executive of CSIRO Energy and a Distinguished Visiting Professor at The University of Western Australia, where she was formerly the Woodside Chair in Oil and Gas Engineering (1995-2003). Dr Ronalds has significant offshore industry experience, including involvement in design, fabrication and installation of fixed and floating platforms for the Australian North West Shelf, North Sea and Gulf of Mexico. She has a Bachelor of Engineering degree from the University of Melbourne and Master of Science, Diploma of Imperial College and a PhD from University of London. Dr Beverley Ronalds is

a Fellow of the Australian Academy of Technological Sciences and Engineering, the Institution of Civil Engineers, the Institution of Engineers Australia and the Australian Institute of Company Directors. In 2003, she was awarded the Prime Minister's Centenary Medal "for service to Australian society in Civil Engineering". She was included in Engineer Australia's inaugural list of 100 most influential engineers in 2004. Dr Ronalds is currently participating in several federal government and state-based initiatives including the Australian Centre for Renewable Energy, Innovation Australia, the National Carbon Capture and Storage Council and the Queensland Clean Coal Council.



Prof Roberto Schaeffer, *Federal University of Rio de Janeiro, Brazil* - Sponsored by ESMAP

Prof. Roberto Schaeffer teaches and conducts research in the Energy Planning Program of the Federal University of Rio de Janeiro, Brazil, where he currently holds an Associate Professor position in Energy Economics. He holds a Ph.D. in Energy Management and Policy from the University of Pennsylvania (USA), a M.S. in Energy Planning from the Federal University of Rio de Janeiro, and a B.S. in Electrical Engineering from the Federal University of Paraná. His main interests are in the fields of energy efficiency, renewable energy and global climate change. Dr. Schaeffer has already supervised more than 80 masters and Ph.D. theses and

published more than 100 scientific papers in the fields of energy and the environment. Previously to his current professional position in the Energy Planning Program, he was, for two years, a Visiting Professor at the Centre for Energy and the Environment, and a Lecturer at the Wharton School, both at the University of Pennsylvania. Dr. Schaeffer has been contributing to the Intergovernmental Panel on Climate Change (IPCC) reports and assessments since 1994 as both Lead-author and Coordinating-lead-author. Currently he is a Coordinating-lead-author of the chapter on 'Mitigation Costs and Potentials' of the upcoming IPCC Special Report on Renewable Energy (SRREN), to be delivered by 2011, and a Coordinating-lead-author of the chapter on "Transportation" of the also upcoming IPCC Working Group 3 Fifth Assessment Report (AR5), to be delivered by 2014. Dr. Schaeffer is also Associate-editor of the two British scientific journals Climate Policy and Energy-The International Journal.



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Prof Ralph Sims, *Massey University, New Zealand*

Prof. Ralph Sims began his career in Sustainable Energy at Massey University, New Zealand in 1971 making and testing biodiesel. He has now returned to his position of Professor of Sustainable Energy, and Director, Centre for Energy Research at Massey University after four years based at the IEA (International Energy Agency) in Paris as a senior analyst working on Renewable Energy and climate change mitigation. He has been a lead author for four reports of the IPCC that was awarded the 2007 Nobel Peace prize jointly with Al Gore. He led the chapter on 'Energy Supply' in the IPCC 4th Assessment Report, the 'Integration'

chapter in the recent IPCC Special Report on Renewable Energy for Climate Change Mitigation and will be leading the 'Transport' chapter of the IPCC 5th Assessment Report over the next three years. He is a Fellow of the Institute of Professional Engineers and of the UK Institute of Agricultural Engineers, a Companion of the Royal Society of New Zealand and received the 2010 Outstanding Achievement Award from the Energy Efficiency and Conservation Authority (EECA) of which he was a Ministerial Board Member appointee for three terms.



Dr Ferenc Toth, *International Atomic Energy Agency (IAEA), Austria*

Dr Ferenc L. Toth is a senior energy economist with the Planning and Economic Section in the Department of Nuclear Energy at the International Atomic Energy Agency (IAEA) in Vienna, Austria. He received his MSc (1978) and PhD (1982) in economics from the Budapest University of Economics and a second doctorate (1994) in economics from the Hungarian Academy of Sciences. He is associate professor at the Corvinus University in Budapest, Hungary. Over the past 25 years, Dr. Toth worked as Senior Scientist and Project Leader on development, energy and environment studies at the International Institute for Applied Systems

Analysis (IIASA) in Laxenburg, Austria and at the Potsdam Institute for Climate Impact Research (PIK) in Potsdam, Germany. His current projects at the IAEA are also in the domain of energy-economic-environmental analysis and include: energy economics and energy policy analysis at national to global scales; global outlook for nuclear energy in the 21st century; strategies and indicators for sustainable energy development; development-energy-environment linkages; climate change mitigation, adaptation and policy issues; impacts and adaptation assessment in the energy sector; energy supply security; prospects for energy technologies in the post-Kyoto agreement. Dr Toth contributed to several assessment reports of the IPCC as Coordinating and Lead Author.



Dr Alex Wonhas, *Energy Transformed National Research Flagship, Australia*

Dr Wonhas took up the role as Energy Transformed Flagship Director in August 2009, bringing with him significant strategic experience in the resources and energy sectors. Dr Wonhas joined CSIRO directly from McKinsey & Company. During his seven years with the global management consulting firm, Dr Wonhas delivered a large number of high impact strategy projects to senior executives and boards of leading international companies, predominantly in the resource and energy sector. For example, Dr Wonhas was one of the co-authors of McKinsey's Carbon Abatement Cost Curve for Australia. He also co-led the

development of the climate change strategy of a major global resource and energy company. He has developed an approach to reduce the carbon emissions of one of the worlds largest mine developments by over 90 per cent compared to baseline emissions. And he has also shaped several long-term commodity strategies for a global resource and energy company to identify opportunities arising from key future challenges such as energy scarcity, climate change and the growth in China and India. At McKinsey he was instrumental in establishing their Australian Climate Change Practice.



Mr Matthew Wright, *Beyond Zero Emissions, Australia*

Matthew Wright is the lead author of the award-winning Zero Carbon Australia Plan, and 2010's Young Environmentalist of the Year. Embodying the qualities of hard work, passion and commitment, Matthew inspires the courage our society will need to tackle the biggest problem we've ever faced. As Founder and Executive Director of not-for-profit organisation Beyond Zero Emissions, Matthew heads the fastest growing climate change research and development group in Australia. While previous environmental advocates have encouraged Australians to take action by changing their light globes, Matthew represents the next wave of

leaders who show how we can change from the 19th century technology that runs our economy to 21st century solutions. His attitude is reflected in Beyond Zero Emissions and fully shared by its workforce, staffed by over 100 volunteers.



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Prof. John Zillman, *Ex Bureau of Meteorology, Australia*

Prof. John W Zillman is a Vice Chancellor's Fellow in the School of Earth Sciences at the University of Melbourne. He worked in the Australian Bureau of Meteorology from 1957 to 2005 including periods in operational weather forecasting and warning, climate service provision and Antarctic and Southern Hemisphere synoptic analysis and research. He served as the Bureau's Head of Research from 1974 to 1978 and as Director of Meteorology from 1978 to 2003. Dr Zillman has been heavily involved in the work of the World Meteorological Organization (WMO) since 1974 and served as President of WMO from 1995 to 2003. He chaired the Steering Committee for the Global Climate Observing System (GCOS) from 2006 to 2009 and the International Organising Committees for the 2007 Madrid Conference on the Social and Economic Benefits of Weather, Climate and Water Services and the 2009 Third World Climate Conference in Geneva. Dr Zillman is a Fellow of the Australian Academy of Science and the Australian Academy of Technological Sciences and Engineering (ATSE). He was President of ATSE from 2003 to 2006, President of the Australian National Academies Forum (NAF) 2005-06 and President of the International Council of Academies of Engineering and Technological Sciences (CAETS) in 2005. He was made an Officer in the Order of Australia in 1996. He is an Honorary Fellow of the Royal Meteorological Society (UK), an Honorary Member of the American Meteorological Society and a Foreign Associate of the Engineering Academy of Japan. He received the Cleveland Abbe Award of the American Meteorological Society in 2004 and the 50th International Meteorological Organization Prize 2005

Other Plenary Speakers



Dr Detlev Heinemann, *Carl Von Ossietzky Universität Oldenburg, Germany*

Dr. Detlev Heinemann is a meteorologist and holds a PhD in Physics. His PhD thesis in 1990 examined the use of energy weather forecasts in renewable energy systems. Today he leads a research group on Energy Meteorology at Oldenburg University with more than 20 researchers in both wind and solar energy meteorology. The work concentrates on physical modelling approaches for resource assessment and power forecasting, including numerical wind flow simulation and satellite-based solar irradiance retrieval. He teaches different aspects of Energy Meteorology as well as general Renewable Energies. He is one of the scientific directors of the ForWind centre for wind energy research, which he also co-founded in 2003.



Dr Frank Mills, *Australian National University, ACT, Canberra*

Dr Franklin Mills is a Fellow at The Australian National University in Canberra. He is a member of ANU's Energy Change Institute with a joint appointment in the Research School of Physics and Engineering and The Fenner School of Environment and Society. His primary research areas have been remote sensing of planetary atmospheres and surfaces, simulation of the transport of radiation through planetary atmospheres, and numerical modelling of the chemistry in the upper atmospheres of the Earth and Venus. Recent research includes studies of precipitation, solar energy, and geothermal energy in the Australian region. His lecturing interests include thermal physics and atmospheric modelling. Prior to joining the ANU, he had positions at the Jet Propulsion Laboratory and the University of California at Los Angeles. He is a Supporting Investigator for the European Space Agency's Venus Express mission and a NASA New Investigator in Earth Science.



Mr Ian Muirhead, *Bureau of Meteorology, Australia*

Ian Muirhead undertook a Master of Environmental Studies at Melbourne University, where his thesis studied the potential for large-scale wind power generation in Victoria. After 13 years working in remote area power systems design at Telstra Research Laboratories, Ian joined the Bureau of Meteorology in 1998. He is currently managing product development for the Bureau's Climate Data Online project, but is actively involved in helping develop the Bureau's renewable energy activities within the Bureau.