



**14th EUROPEAN CONFERENCE
ON THE LATEST TECHNOLOGIES IN:
RENEWABLE ENERGY, APPLICATIONS
IN HEATING AND COOLING**
Heriot-Watt University - Edinburgh, 21st January 2011
**AIR CONDITIONING
AND REFRIGERATION**
Politecnico of Milano, 10th-11th June 2011



Under the auspices of the
Italian Government



Politecnico of Milano

www.EUenergycentre.org

www.centrogalileo.it

"Getting Ready for Renewable Energy - Green New Deal"

Two European conferences make green new deal (GND) a reality

We are pleased to announce that in conjunction with the United Nations Environment Programme (UNEP) and the International Institute of Refrigeration (IIR) our 14th biennial European conference will take place in both Italy and the UK.

The first sitting will take place on the 21st January 2011 in Edinburgh, Scotland with the outcomes being carried forward to the second on the 10th and 11th of June 2011 in Milan. These conferences are part of the European conference series we have been organising every two years since 1983.

"Getting Ready for Renewable Energy - GND" is an important international conference that will take place in the Scottish capital. Putting into practice the aims of the GND, it will explore opportunities for partnerships throughout Europe between businesses and institutions within the expanding field of renewable energy.

The GND is the solution to both the economic and environmental challenges the world faces today. Investment and development in new and renewable technologies will contribute to a reduction in climate change whilst creating economic growth through trade and employment opportunities.

The conference is organised by the European Energy Centre (UK), Centro Studi Galileo (IT), the Indian association TERRE and the Association of Refrigeration Technicians (Associazione Tecnici del Freddo - ATF). Building upon the outcomes of the 13th European Conference - which CSG chaired in partnership with the United Nations last year - this conference will directly address the Scottish Government's desire to collaborate with international institutions to push on Renewable Energy Applications.

After the UN global summit on climate change, which was held in Copenhagen last December, "Getting Ready for Renewable Energy" will provide real tangible solutions to the environmental challenges being faced in Europe and throughout the rest of the world. Whilst politicians discuss the wider context of these changes, this conference will demonstrate the positive action renewable businesses can take today to implement the GND, reap the financial benefits and create a sustainable energy future for us all.

The conference will also mark the inauguration of Centro Studi Galileo's new European Energy Centre (EEC), in the UK. The EEC will provide quality, professional training on energy saving and renewable energy.

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THE LATEST TECHNOLOGIES IN RENEWABLE ENERGY, APPLICATIONS IN HEATING AND COOLING

Some Highlighted speakers:

(in alphabetical order)



Alberto Cavallini
Professor, Honorary President I.I.R. University of Padova

Professor Alberto Cavallini is full professor of Energy Science with the Engineering Faculty of the University of Padova. He has been the Director of the Institute of Fisica Tecnica of the University of Padova, and of the Refrigeration Institute of the Italian Research Council. He is the 2002 winner of the J&E Hall Gold medal, awarded by the U.K. Institute of Refrigeration for the most noteworthy contribution to the advancement of refrigeration. His research in the field of energy management, heat transfer, refrigeration and air-conditioning, with particular reference to problems related to the refrigerant substitution issue.

Additionally, Professor Cavallini has been president of a number of leading distinguished associations.



Didier Coulomb
Director, International Institute of Refrigeration

Didier Coulomb is the Director of the International Institute of Refrigeration (IIR), an intergovernmental organisation comprising 61 Member countries and many private and corporate members. The IIR mission is to promote knowledge of refrigeration technology and all its applications in order to address today's major issues, including food safety and protection of the environment (reduction of global warming, prevention of ozone depletion). In previous roles Mr Coulomb worked for the French Ministry of Agriculture and Forestry where he was more specifically in charge of technology and innovation (1984-1993). He then worked at the French Research Ministry, in particular, as Deputy Director for innovation and technological development (1994-2002).



Graeme Fox
President, European Association AREA

Graeme Fox is the president of AREA, the European organisation of air-conditioning, refrigeration and heat pumps contractors. Established in 1988, AREA represents the interests of 23 national members from 20 European countries, 125,000 people working in the sector. Mr Fox is an experienced contractor whose expertise has already benefitted AREA for many years. He has been in the Board for a couple of years and also chairs the Task Force on the F-Gas Review. Graeme Fox has been a HVCA (Heating & Ventilating Contractors Association) Council member since 2004, RAC Group Executive committee member since 2000, RAC Group Past Chairman, HVCA Scotland committee member.



Ennio Macchi
Professor, Politecnico di Milano, Energy Department

Professor Ennio Macchi was Vice-Director of the Institute of Thermal and Hydraulic Machines of Politecnico di Milano from 1973 to 1980 and has been Vice-Director of Department of Energetics of Politecnico di Milano since 1987. He is member of Managing Committee of the Italian Association of Professors of Machines and Energy Systems (about 200 professors) since 1980 and Chairman of the Committee (1998-2002). Professor Macchi has been the President of the Mechanical Engineering Faculty of Politecnico di Milano in Piacenza since 2003. He was a member of the Academic Senate of Politecnico di Milano (2002-2006) and a Scientific Coordinator of the Strategic Area "Energy" at Politecnico di Milano. Professor Macchi has received many awards throughout his career.



Tariq Muneer
Professor, Energy Engineering, Edinburgh Napier University

Professor of Energy Engineering at Edinburgh Napier University, Professor Muneer is an international authority on the subject of solar radiation and daylight illuminance modelling and the application of windows in buildings with over thirty years experience in these fields of work. He is the author of 200 technical articles, most of which have been distilled into definitive books.

He served as the Chairman of the Chartered Institution of Building Services Engineers' Solar Data Task Group and in this capacity he was involved in the production of the CIBSE Guides A & J for Weather and Solar Data.

He has also been employed both by the government and industry as a consultant on a large number of engineering projects and has been awarded several prestigious awards.



Susan Roaf
Professor at Heriot-Watt University

Professor Susan Roaf is a visiting Professor at the Open University and Arizona State University as well as an Oxford city councillor and director of LCCI (the Low Carbon Cities Initiative). In 2005, she became Professor of Architectural Engineering at Heriot-Watt University in Edinburgh.

Not only she is an award winning teacher, designer and author, she is also Co-Chair of both the TIA, the international Teachers In Architecture organisation and of the Westminster and Scottish Carbon Counting Group. She is best known as a designer for her Oxford Ecohouse which was the first UK building with an integrated photovoltaic roof. It was designed using low energy construction techniques, high thermal mass and a wood burning stove to reduce carbon dioxide emissions by over 95%.



Rajendra Shende
Head, United Nations Environment Programme, OzoneAction

Rajendra Shende initiated the Energy Programme in the UNEP office in Paris and has been instrumental in integrating climate change activities. He coordinated more than 20 workshops in partnership with other agencies and initiated one of the first GEF projects in Paris. Apart from being review editor of IPCC's special report on Technology Transfer, he was the coordinating lead author for the special report of IPCC/TEAP on Safeguarding the Ozone layer and the Global climate system. His present work focuses on strengthening the implementation of the Montreal Protocol and coordinating the implementation of MEAs with practical and workable examples. Author of numerous published policy papers, Mr. Shende has given various presentations for the public as well as for Universities including MIT-USA, Swiss Technical Institute and Beijing University.

"Getting Ready for Renewable Energy - Green New Deal"

21st January 2011 Conference

9.00 am

Welcome to Heriot-Watt University by the Principal Professor **S. Chapman**

GENERAL INTRODUCTION

Energy and environmental optimization with reference to new plant developments

Member of Scottish Parliament (invited)
J. Mather - Scottish Energy Minister MSP
R. Shende United Nations – UNEP
D. Coulomb IIR
G. Fox, M. Buoni AREA
S. Roaf Heriot-Watt University
A. Cavallini University of Padova – IIR
E. Macchi Politecnico of Milan
A. Pearson IOR

First Session

THE NEW COMPONENTS AND EQUIPMENT IN RELATION TO ENERGY SAVING AND ENVIRONMENTAL ISSUES TO CUT CO₂ EMISSIONS, RESULTS AND UPDATES OF NEW HEATING AND COOLING SYSTEMS.

CHAIRPERSONS:

R. Shende OzonAction Programme United Nations; **S. Roaf** Heriot-Watt University;
A. Cavallini University of Padova; **E. Macchi** Politecnico of Milano;
T. Muneer Edinburgh Napier University; **P. Creaney** ACR Today

Heat Pumps - air, water and geothermal systems.

Air Conditioning - innovative AC applications, energy efficiency.

Biomass - use of domestic and agriculture waste.

Photovoltaic - grid connection and stand alone.

Thermal Solar - heating and cooling systems.

Wind Power - installation and maintenance of small and big windmills.

New technology plants, new technology energy optimization, new components for household, commercial and industrial renewable energy. New technologies in RE, process and design. New technology in insulation.

Speakers: **S. Roaf** Heriot-Watt University - **A. Cavallini** University of Padova - **E. Macchi** Politecnico of Milano - **A. Pearson** Institute of Refrigeration - **P. Castaldo** Consultant - **P. Lundqvist** IIR - **T. Mallick, J. Wilson** Heriot-Watt University - **T. Muneer** Edinburgh Napier University - **F. Asdrubali** University of Perugia - **J. Roy** CREST Loughborough University - **I. Tansley** True Energy - **J. Boone** Mayekawa Europe - **N. Achaichia** Honeywell.

OPEN FORUM FOR DELEGATES

HOW TO APPLY FOR GRANTS AND FUNDING

Networking Lunch 1pm - 2pm

Programme in Edinburgh

Second Session

HOW TO APPLY FOR GRANTS AND FUNDING FOR GREEN ENERGY PROJECTS.
EUROPEAN AND INTERNATIONAL LAWS AND CLIMATE CHANGE.
CERTIFICATIONS AND LICENCES IN ENERGY SAVING.
ENERGY CERTIFICATION OF BUILDING DIRECTIVE.
NEW CONTROL TECHNOLOGIES IN RENEWABLE ENERGIES.

CHAIRPERSONS:

European Commission; **E. Macchi** Polytechnic of Milano; **T. Dwyer** ASHRAE;
S. Russell University of Edinburgh; **M. Masoero** Politecnico of Torino;
R. Shende OzonAction Programme United Nations; **G. Fox** AREA

New Regulations: inspections, logbook, handling components, minimum requirements for personnel, training. European certifications and licences. Issues concerning production and installation. Energy saving optimization. Energy Certification of Building. Environmental control for comfort and energy optimization.

Speakers: European Commission - **T. Dwyer** ASHRAE - **A. Voigt** European Partnership for Energy and Environment EPEE - **G. Fox** Air Conditioning and Refrigeration European Association AREA - **K. Berglof** Climacheck - **M. Masoero** Politecnico of Torino - **S. Russell** University of Edinburgh - **D. Prentice** GeoCapita Group - **S. Landolina** European Renewable Energy Centres Agency EUREC.

OPEN FORUM FOR DELEGATES

HOW TO APPLY FOR GRANTS AND FUNDING

Third Session

OPEN DISCUSSION ON:
ENERGY AND ENVIRONMENTAL ISSUES, GOVERNMENT SUBSIDIES AND THE ENVIRONMENT:
EXPLORING THE LINKS WITH GND, BRIGHT PROSPECTS
IN RENEWABLE ENERGY TRAINING AND EUROPEAN REGULATIONS.

CHAIRPERSONS:

R. Shende OzonAction Programme United Nations; **D. Coulomb** IIR;
A. Cavallini University of Padova; **A. Pearson** Institute of Refrigeration;
European Commission;

Discussion on energy issues in relation to renewable energies, components and plant optimization. Government subsidies - benefits for the Environment. Discussion on energy saving and maintenance. European regulations.

Speakers: **R. Shende**, **E. Clark** OzonAction Programme United Nations - **D. Coulomb** IIR - **K. MacGregor** Solar Mac Gregor - **P. Creaney** ACR Today - **P. Kew** Heriot Watt University.

OPEN FORUM FOR DELEGATES

HOW TO APPLY FOR GRANTS AND FUNDING

CONCLUSIONS OF THE CONFERENCE ON THE FUTURE PROSPECTIVES
OF RENEWABLE ENERGIES IN HEATING AND COOLING
AND THEIR ROLE IN COMBATting CLIMATE CHANGE.

D. Coulomb IIR

R. Shende OzonAction Programme United Nations

"Getting Ready for Renewable Energy - Green New Deal"

10th-11th June 2011 Conference

9,00 am - Friday 10th June 2011

Greetings from Giulio Ballio
Rector of Politecnico of Milan

GENERAL INTRODUCTION

New regulations on F-gases and new refrigerants.
New plants with reference to energy and environmental optimization.
World situation.

R. Shende United Nations UNEP
D. Coulomb International Institute of Refrigeration

First Session

NEW REFRIGERANTS AND PERSPECTIVES ENERGY SAVING

CHAIRPERSONS

A. Cavallini - Università di Padova - I.I.R.; **R. Shende** OzonAction Programme United Nations;
D. Coulomb International Institute of Refrigeration; **L. Lucas**, **P. Antoine** Association Française du Froid;
S. Yurek AHRI; **D. Clodic** Ecole des Mines; **A. Voigt** EPEE

Developments, perspectives and forecasts on new refrigerant plants and components. New synthetic and natural refrigerants, pure and mixtures (R134a, R404A, R507A, R407C, R410A, R417A, R422A, R422D...), HFO-1234yf, CO₂, ammonia, hydrocarbons; secondary refrigerants; energy efficiency; lubricants for synthetic and natural refrigerants.

Speakers: **R. Shende** UNEP - **A. Cavallini** I.I.R. - **D. Coulomb** I.I.R. - **L. Lucas** C.N.F. - **S. Yurek** AHRI - **W. Chakroun** ASHRAE - **D. Clodic** Ecole des Mines - **P. Neksa** Sintef Energy Research (Norway) - **A. Pearson** IOR - **J. P. Garcia** Du Pont (UK) - **E. Campagna** Rivoira - **N. Achaichia**, **G. Matteo** Honeywell - **C. Zilio** Università di Padova

Discussion with the participants in the conference

Second Session

NEW COMPONENTS AND EQUIPMENT IN RELATION TO ENERGY SAVING AND ENVIRONMENTAL ISSUES NEW REFRIGERANTS RESULTS AND UPDATES IN NEW SYSTEMS

CHAIRPERSONS

E. Macchi, **G. Lozza**, **C. M. Joppolo** - Politecnico di Milano; **L. Lucas** - Conseil National du Froid;
P. Egolf - International Institute of Refrigeration; **H. Halozan** - Graz University of Technology, Austria
F. Asdrubali - Università di Perugia; **L. Bellenger**, **T. Phoenix**, **W. Chakroun** - ASHRAE

Energy issues in relation to the air conditioning and refrigeration components and plants optimization: energy saving. The magnetic cooling. The solar refrigeration and cooling with absorption plants. Renewable energy in air conditioning and refrigeration fields. Secondary refrigerant plants, ammonia, CO₂, absorption, hydrocarbon plants, Ice Slurry CO₂ hydrate slurry. New technology compressors and systems, new technology energy optimization, new components for household, commercial and industrial refrigeration. New technologies in air conditioning, refrigeration, process and design (legionella issue).

Speakers: **E. Macchi** Politecnico di Milano - **L. Lucas** C.N.F. - **P. Egolf** I.I.R. - **O. Sari** University of Western Switzerland - **H. Halozan** Graz University of Technology, Austria - **F. Asdrubali** Università di Perugia - **G. Lozza** Politecnico di Milano - **Yang Yifan** Chinese Association of Refrigeration - **H. Renz**, **P. Trevisan** Bitzer - **E. Winandy**, **W. Bianchi** Emerson Climate Technologies - **M. Casini**, **G. Pisano**, **M. Dorin** Off. Mario Dorin - **F. Benassis** AICVF - **P. Valero** Embraco - **C. Angelantoni** Angelantoni Industrie - **M. Collantin** consultant - **J. Boone** Mayekawa

Discussion with the participants in the conference

Programme in Milan

9.00 am - Saturday 11th June 2011

INTRODUCTION

R. Shende OzonAction Programme United Nations; **D. Coulomb** I.I.R.
P. Owen, M. Avraamides European Commission - **A. Peru, F. Fricano** Ministero dell'Ambiente

Third Session

OPEN DISCUSSION ON ENERGY AND ENVIRONMENTAL ISSUES, NEW FLUIDS, NEW COMPONENTS AND NEW PLANTS IN REFRIGERATION AND AIR CONDITIONING: REVIEW EUROPEAN REGULATION ON F-GASES

CHAIRMEN (open discussion):

R. Shende OzonAction Programme United Nations; **P. Owen, M. Avraamides** European Commission;
A. Cavallini International Institute of Refrigeration I.I.R.; **D. Coulomb** International Institute of Refrigeration;
L. Lucas Conseil National du Froid; **P. Antoine, A. Mearini** Association Française du Froid A.F.F.;
W. Chakroun ASHRAE; **S. Yurek** AHRI - **G. Fox** AREA; **M. Masoero** Politecnico di Torino
H. Halozan Graz University of Technology, Austria

Discussion on energy issues in relation to the air conditioning, refrigeration components and plants optimization. Heat pumps and geothermal plants. Discussion on energy saving and maintenance. European regulation on F-gases.

Speakers (open discussion): **R. Shende** OzonAction Programme United Nations - **P. Owen, M. Avraamides** European Commission - **A. Peru, F. Fricano** Ministero dell'Ambiente - **D. Coulomb** International Institute of Refrigeration - **L. Lucas** CNF - **P. Antoine, A. Mearini** A.F.F. - **W. Chakroun** ASHRAE - **S. Yurek** AHRI - **G. Fox** AREA - **A. Voigt** European Partnership for Energy and Environment - **D. Clodic** Ecole des Mines - **R. Camporese** ITC CNR di Padova - **F. Benassis** A.I.C.V.F. - **A. Chikouche** UDES Algeria - **J. Suss** Danfoss - **M. Collantin** consulente

Discussion with the participants in the conference

Fourth Session

F-GAS REGULATION, EUROPEAN AND INTERNATIONAL LAWS, CERTIFICATIONS AND LICENCES IN REFRIGERATION AND AIR CONDITIONING AND ENERGY SAVING

CHAIRMEN

P. Owen, M. Avraamides European Commission; **A. Peru, F. Fricano** Ministero dell'Ambiente;
R. Shende OzonAction Programme United Nations; **D. Coulomb** International Institute of Refrigeration;
G. Fox AREA; **A. Voigt** E.P.E.E; **S. Yurek** AHRI; **M. Lowry** RSES; **P. Antoine, A. Mearini** A.F.F; **L. Lucas** CNF

New F-Gas Regulation: Inspections, Logbook, handling refrigerants, minimum requirements for personnel and companies, trainings. New fluids: detection of refrigerant leaks; fluids recovery, recycling and destruction. European certifications and licenses, welding, brazing. Issues concerning production and installation.

Speakers: **P. Owen, M. Avraamides** European Commission - **A. Peru, F. Fricano** Ministero Ambiente - **P. Antoine, A. Mearini** A.F.F. - **G. Fox** AREA - **A. Voigt** EPEE - **M. Lowry** RSES - **P. Fantoni, A. Sacchi** ATF

Fifth Session

NEW CONTROL TECHNOLOGIES, THE COLD CHAIN, COLD STORAGE AND TRANSPORT

CHAIRMEN

R. Shende UNEP; **D. Coulomb** IIR; **G. Panno** Università di Palermo; **E. Fornasieri** Università di Padova;
G. Panozzo, R. Camporese ITC CNR Padova; **P. Amirante** Università di Bari; **G. Cavalier** Cemafrid

New technology in the cold chain: cold storage, refrigeration preservation, insulation; applications to industry. New equipment and controls. Energy saving optimization in the cold chain. Environmental control in food processes and safety control in the cold chain: ATP.

Speakers: **D. Coulomb** IIR - **G. Cavalier** Cemafrid - **M. Masoero** Politecnico di Torino - **G. Panno** Università di Palermo - **E. Fornasieri, L. Cecchinato** Università di Padova - **G. Panozzo** ITC CNR Padova - **A. Greggio** Carel - **P. Homsy** Nestlé - **Xu Xiangguo** University of Hong Kong - **S. Iyama** Bio Intelligence - **A. Sacchi** ATF - Politecnico Torino

General discussion with the participants in the conference

CONCLUSIONS ON THE FUTURE PROSPECTIVES OF REFRIGERATION AND AIR CONDITIONING IN RELATION TO NEW REGULATIONS AND NEW TECHNOLOGIES DUE TO CLIMATE CHANGES

R. Shende OzoneAction Programme United Nations

"Getting Ready for Renewable Energy - Green New Deal"

THE LATEST TECHNOLOGIES IN RENEWABLE ENERGY, APPLICATIONS IN HEATING AND COOLING

REGISTRATION FORM

To register, you can either:

1. Post this completed form to: European Energy Centre
68 Spottiswoode Street, Edinburgh, EH9 1DH
2. Fax a copy of this form to (+44) 020 3300 7541
3. Email a scanned copy of this form to conference@EUenergycentre.org
4. Register online at www.EUenergycentre.org

DELEGATE DETAILS (Please complete in block capitals and photocopy for additional delegates)

Title: First Name: Surname:

Position: Organisation:

Address: Postcode:

E-mail: Telephone:

By signing and returning this form to us you agree to the terms and conditions below. Your place cannot be reserved without filling in and sending us this form.

Signature Date:

Special requirements (e.g. mobility, access, hearing, vision, diet etc):

Conference fee Edinburgh:

☐ Full rate £ 145.00

Conference fees Milan:

☐ Full rate Euro 360,00 + VAT 20%

☐ Special discount rate (if registering by the 15th January 2011) Euro 180,00 + VAT 20%

Conference fee Edinburgh + Milan:

☐ Full rate Euro 400,00 + 20% VAT

Payments must be made prior to the conference to guarantee a place, please tick the relevant box below:

☐ Cheque: I post a cheque for £/€ made payable to European Energy Centre Ltd
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Terms and Conditions: by signing and sending this form to us you enter a legal binding agreement. Cancellations confirmed within 1 month to the event taking place will be refunded minus a small administration charge of 15%. All cancellations must be confirmed in writing. Due to the organisation of such large scale events, we regret that no refunds can be made after that date, however substitutions can be accepted if notified in writing before the event. Bookings made later than a month prior to the event date are non-refundable. Photographs will be taken during the conference, such photographs will be used for online and printed publications and publicity.

Data Protection: The personal information you provide will be held on a database at European Energy Centre and Centro Studi Galileo and will not be shared with any external companies or organisations.



Conference Organiser and Secretariat:

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