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When submitting articles
please send in ASCII text or
RTF format with hard copy.
All illustrations / photographs
welcome.

Co-ordination Meeting between WREN and the Islamic Educational, Scientific and Cultural Organisation

Rabat, Morocco, 19-20 September 2001



Within the framework of the Co-operation Agreement between ISESCO* and WREN, signed in Rabat on 15 January 2001, this co-ordination meeting was held in order to agree on activities to be jointly implemented and financed by ISESCO and WREN for the years 2002-2003.

The meeting agreed on the following activities:

For the year 2002:

1-World Renewable Energy Congress

(29 June to 5 July 2002, Cologne, Germany):

ISESCO will contribute \$20,000 towards the organisation of the Congress.

Within the framework of the Congress three activities will be held:

a) Workshop on Poverty Reduction in Developing Countries through the use of Renewable Energy (29 June 2002). Speakers in the workshop will be from:

Malaysia, the Shell Programme (South Africa), the Chief Advisor of the Department for International Development (UK), ISESCO, Pakistan, Sudan, and the All Woman Conference

b) World Renewable Energy Council Meeting (30 June 2002):

With the participation of all countries in addition of some organisations, ISESCO Director General will participate in the meeting.

c) Opening of the World Renewable Energy Congress (1 July 2002):

ISESCO Director General will address the Opening Session (10 minutes presentation, theme to be discussed).

The Congress meetings will continue to 5 July 2002. On 1 July a special VIP dinner will be given by the Congress Chairman and the presence of H.E. the Director General of ISESCO is requested by WREN. On 3 July a banquet will be offered by the organisers (on the Rhine, fireworks, etc.).

It is agreed that ISESCO's name and logo will appear on all documents and announcements as one of the main sponsors of the Congress.

2-World Renewable Energy Network Annual Seminar in UK

("Renewable Energy: Major Environmental Option for Sustainable Development" December 2002.)

This Seminar is directed at policymakers, government officials and top researchers.

ISESCO will sponsor 3 participants from its Member States (tickets, registration and upkeep) for the sum of \$6,000.

3-Regional training course for rural leaders

(the use of renewable resources of energy, Cameroon, March 2002) in co-operation with Munazamat Aldawa Alislamiya, Sudan:

WREN will provide technical support by presenting two papers, in addition to covering travel costs of their participation.

For the year 2003:

1-Regional Conference on Renewable Energy,

To be organised by ISESCO (Indonesia, first week of February, 2003):

ISESCO and WREN will contribute a total of \$30,000 in addition to contributions from other partners.

2-World Renewable Energy Network Annual Seminar

(August 2003, UK)

This Seminar is directed at policymakers, government officials and top researchers.

ISESCO will sponsor 3 participants from its Member States (tickets, registration and upkeep) for the sum of \$6,000.

3-Regional training course for rural leaders

(the use of renewable sources of energy, Mali, June 2003):

WREN will provide technical support and cover travel costs of its participation.

It is understood from previous agreement that ISESCO is a permanent member of WREN and WREN is affiliated to ISESCO in all its

activities in Renewable Energy. WREN will require a prior notice (3 to 6 months) in order to make the necessary preparations to take part in ISESCO's activities.

It was agreed that in all joint activities, names and logos of both ISESCO and WREN should appear on all documents and announcements regarding those activities.

** ISESCO, the Islamic Educational, Scientific and Cultural Organisation, was set up by the Eleventh Islamic Conference of Foreign Affairs Ministers in 1980. The Organisation has*

signed 112 co-operation agreements with Islamic, International and Regional organisations and membership stands at 48 States. ISESCO has held training sessions, workshops, specialised meetings and educational, scientific and cultural symposia for thousands of participants. ISESCO has also published books and studies in Arabic, English and French, in addition to Islam Today Journal and the ISESCO Newsletter. Over 2,250 scholarships have been granted to students from member States and Muslim communities worldwide.

CARIBBEAN SOLAR ENERGY SOCIETY CONFERENCE/EXHIBITION

Sustainable Applications for Tropical Island States, Le Meridan Jamaica Pegasus Hotel, Kingston, Jamaica, 28 - 31 August 2001



The Conference was opened by the Deputy Prime Minister and Minister of Land and Environment the Hon. Seymour Mullings, M.P.

The World Renewable Energy Network was delighted to sponsor and work closely with the Caribbean Solar Energy Society for the success of the above conference. The conference was attended by 60 top scientists from various countries, among them:

Dr. Larry Kazmerski, Director of US Photovoltaic Centre at the National Renewable Energy Laboratory, Denver, Colorado, Mr. Bill Rever, B P Solar: Photovoltaics 2001 - A review of the Industry and Market, Professor Jorge Gonzalez: Solar Air-conditioning Systems with PCM Solar Collectors, Dr. Indra Haraksingh: Heat and Mass Transfer in the Natural Convection Oil Bath Solar Cookers, Mr. Christopher Menke: Does the Utilisation of PV Systems Contribute to Climate Change Mitigation, Mr. Raymond Wright: Jamaica Faces the Energy Future and Mr. Oliver Headley: Barbados Renewable Energy Scenario - current status and projections to 2010.

Professor Sayigh, Chairman of the World Renewable Energy Congress and Director General of World Renewable Network gave a

plenary lecture on Renewable Energy as the world's best option. He also chaired several sessions and interacted with various speakers on their speeches.

There was a small exhibition attached to the Conference with about twelve exhibitors. Among them were Shell, BP, Duke Solar and the Jamaican Oil Co.

It was a very successful meeting whereby all the participants enjoyed the Caribbean hospitality as well as the wealth of technical presentations. The World Renewable Energy Network thanks Dr. Raymond Wright and the present Chairman of the Caribbean Solar Energy Society and Dr. Indra Haraksingh for their organisation and hospitality.

The next Caribbean meeting will be in August 2003.



World Renewable Energy Congress VII

29 June - 5 July 2002 Cologne - Germany

RENEWABLES the WORLD'S BEST ENERGY OPTION

Final call for abstracts: (although the deadline is finished) abstracts will be considered until 30 January, 2002

Among the Sponsors

Landesinitiative Zukunftsenergien NRW, Nordrhein Westfalen Germany, Forschungszentrum Julich GmbH, United Nations Educational and Cultural Organization, United Nations Development Programme, European Commission, Islamic Educational, Scientific and Cultural Organization, US Department of Energy, US National Renewable Energy Laboratory, Department for International Development, Commonwealth Science Council, World Energy Council, University of Ulster, Warwick University, University of Bahrain, University of Nottingham, British Building Research Establishment, International Centre for Theoretical Physics, Third World Academy of Science, Elsevier Science Ltd., Cinergy Renewable Trading Ltd., Renewable Energy Systems Ltd., Thermomax Ltd., World Renewable Energy Network, Reed Exhibition Companies, Ove Arup and Partners.

CONGRESS TOPICS:

POLICY ISSUES & RELATED TOPICS (PI)

- 1- Development Targets, Sustainability Indicators, and the Contributions of Renewables.
 - i- Development Targets.
 - ii- Sustainability Indicators
 - iii- Specific Contributions of Renewables to Targets or as an Indicator.
- 2- Rural Energy Access.
 - i- The Role of Renewables in Tackling Rural Energy Poverty.
 - ii- Energy Services Provision for Income Generation.
 - iii- Energy Services for Advancing Health and Education
 - iv- Empowering the Individual and Raising Expectations.
 - v- Financing Renewable Energy Diffusion.
 - vi- Case Studies illustrating the above.
- 3- The Different Models Being Applied.
 - i- Creating Markets in Developing Countries.
 - ii- Commercialising Renewable Energy.
 - iii- The Role of Official Development Assistance.
 - iv- The Strength and Weaknesses of Markets.
 - v- ESI Privatisation - help or hindrance for Renewable Energy Use.
 - vi- Effective Regulatory Frameworks for Advancing Renewable Energy Use.
 - vii- Planning Issues in Renewable Energy Expansion.
 - viii- Policies and Measures for Advancing Renewable Energy Use.
 - ix- Institutional Barriers to Advancing Renewable Energy Use.

- x- Case Studies illustrating the above.
- 4- Improving the Compatibility of International Trade and the Environment.
 - i- Shifting the Priorities of the World Trade Organisation.
 - ii- Refocusing the Efforts of Multilateral Agencies.
 - iii- Reforming Export Credit Policies to Promote Renewable Energy.
 - iv- Improving the Coherence between Domestic and International Policies.
 - v- The Role of Bilateral Agreements in the Transfer of Renewable Energy Technologies.
 - vi- Advancing the Use of New Mechanisms for the Transfer of Environmentally Sustainable Technologies - through the Clean Development Mechanism.
 - vii- Case Studies illustrating the above.
- 5- Promoting Renewable Energy in the Leading Industrialised Countries for Global Benefit
 - i- Renewable Energy RD&D in Leading Industrialised Countries.
 - ii- Policies and Measures for Promoting Renewable Energy in Leading Industrialised Countries.
 - iii- Achieving Technology Learning/Cost 'Buy - Down'.
 - iv- Accelerating the International Diffusion of Renewable Energy.
 - v- Facilitating Capacity Building for R&D, and Business Development, within Developing Countries through Industrialised Country Initiatives.
 - vi- Case Studies illustrating the above.

LOW ENERGY ARCHITECTURE (LEA)

- 1- Thermal Environment (thermal comfort, air quality, ventilation),
- 2- Visual Environment (daylighting, low energy lighting),
- 3- Building Design Case Studies (forms, elements and materials),
- 4- The urban environment (airborne pollution, noise, heat islands etc),
- 5- Building and sustainability (life cycle performance, local renewable energy systems),
- 6- Building refurbishment (integration of renewables),
- 7- Architecture (education, social and psychological issues related to low energy architecture),
- 8- Building Environmental Simulation,
- 9- Policy Issues and Regulations for Buildings and Urban Design.

PHOTOVOLTAIC TECHNOLOGY (PV)

- 1- Solar cell fundamentals and technology,
- 2- BOS components,

- 3- PV manufacture, testing and certification,
- 4- Stand-alone systems,
- 5- PV for rural development,
- 6- PV in the built environment,
- 7- Utility and grid connection issues,
- 8- Markets and commercialization,
- 9- Financing schemes,
- 10 National Programme, Implementation and Strategy.

SOLAR THERMAL APPLICATIONS (ST)

- 1- Collector Technology,
- 2- Water Heating,
- 3- Thermodynamic Systems/Thermal Electricity,
- 4- Thermal and Hybrid Applications,
- 5- Thermal Fundamentals,
- 6- Rural Applications.

WIND ENERGY (WE)

- 1- Technical, Environmental and Resources Issues,
- 2- National Programme and Institutional Issues,
- 3- Off-shore Wind Power,
- 4- Small and Hybrid Wind Systems.

BIOMASS for ENERGY and MATERIALS (BM)

- 1- Heat and Electricity Generation,
- 2- Energy Crops and Residues,
- 3- Liquid Fuels,
- 4- Environmental Aspects,
- 5- Socio- economics and Case Studies.

SOLAR MATERIALS TECHNOLOGY (SM)

- 1- Advanced Glazing Including Low Emittance and Solar Gain Control Coatings,
- 2- Spectrally Selective Solar Absorbers,
- 3- Smart Materials, e.g. Electrochromic, Gasochromic, Thermochromic Systems,
- 4- Daylighting, Angle Selective and Redirectional Materials, Shading Systems,
- 5- Antireflection Coatings.

FUEL CELL SYSTEMS (FC)

- 1 - Cell Technology and Fabrication,
- 2 - Fuel Cells for Transportation,
- 3 - Fuel Cells for Heating and Electricity Generation,
- 4 - Fuel Processing for Fuel Cell Systems.

ENERGY, GENDER, AND POVERTY REDUCTION

- 1- Indoor Air Pollution and Health Issues,
- 2- Integration of Energy into Rural Development,
- 3- Access to and Provision of Energy Services,
- 4- Markets and Commercialisation,
- 5- Energy Policy and Planning.

OTHER MAJOR TOPICS (OMT)

- 1- Water, Wave and Hydro Power,
- 2- Geothermal Energy,
- 3- Hydrogen Technology,
- 4- Ocean Thermal Conversion,
- 5- Energy Storage,
- 6- Village Power.

REVIEW PROCEDURE

Papers will be presented in plenary, oral and poster sessions. All presented papers will be fully reviewed and published in the proceedings.

Authors wishing to submit a contribution should read the following instructions carefully and send an abstract to the address below.

The abstract, single spaced and in English, should not exceed one page (A4, 210x297mm) and should include:

- Applicable subject code/symbol: For example, an abstract in **WIND ENERGY** has **WE**,
- Full title,
- Full name and address of one author for all correspondence,
- For each author and co-authors, full name, affiliation, address, phone/fax/email,
- Purpose of the work,

- Approach,
 - Scientific innovation and relevance,
 - Some results,
 - Conclusions,
 - For more information how to prepare the abstract see: <http://www.wrenuk.co.uk>
- Abstracts must be sent in triplicate to:
Prof Ali Sayigh, Congress chairman, WREN,
147 Hilmanton, Lower Earley,
Reading RG6 4HN, UK
Tel: +44(0) 118 9611364
Fax: +44(0) 118 9611365
Email: asayigh@netcomuk.co.uk

WREN International Seminar in Britain

RENEWABLE ENERGY Major Environmental Option for Sustainable Development, Old Ship Hotel, Brighton, UK, 19 - 25 August, 2001

The Seminar was sponsored by: The Commonwealth Science Council; Department for International Development; Department of Trade and Industry; Elsevier Science Ltd; Institute of Energy; and The World Renewable Energy Network. It was also supported by The British Council and UNESCO.

The Seminar was attended by 21 participants: One from each of the following countries: UK, Malawi, Mali, Turkey, Bahrain, Swaziland, Philippine, Botswana, Belgium, China, Indonesia, Sultanate Oman, Brazil, St. Lucia and Finland, three participants from Thailand and three from Malaysia.

There were 21 invited speakers who spent at least one day each with the participants.

The programme ran for 6-days and consisted of four parts:

Part one: Climate Change & Sustainable Development: Speakers, Prof Marco Sala, Prof Phil Eames, Dr Robert Critoph and Dr Caroline Livingstone. A workshop on Climate Change & Sustainable Energy

Options organized by Dr Ritu Kumar with speakers: Mr Michael Jefferson; Mr Steve Drummond, and Dr Ritu Kumar. This was followed by five presentations, half an hour each, from five of the participants.

Part two: Renewable Energy Applications. Speakers Dr Larry Kazmerski, Mr Tony Book, Prof Dave Elliott, Mr David Porter, Mr Martin Alder and Mr Richard Jones. One day Technical Visit to Thermomax facilities in Wales. Dr

Vahid Tabatabai, Managing Director of Thermomax, received the participants and gave them tour of the facilities.

Part three: International Development & Cooperation: Five speakers: Arch Ana Rodriguez-Gabriel, Dr Larry Kazmerski, Mr Andre Gillet, Mr Alex Southcombe and Dr Arthur Williams.

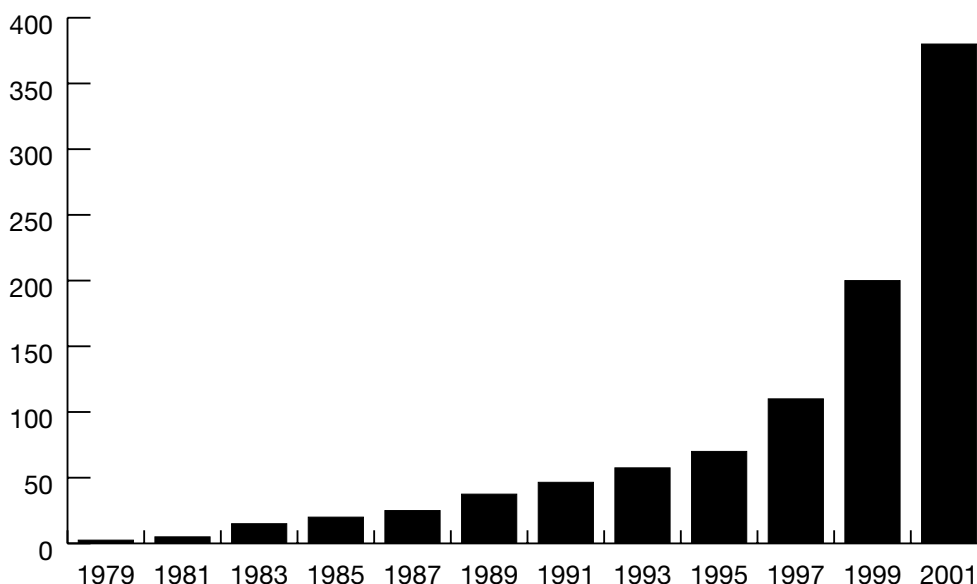
Part four: Environmental Issues: Five lectures were delivered by experts: Dr Larry Kazmerski, Dr Keith Richards, Dr Jim Coombs, Prof Michael Hutchins and Mr Chris Shear.

During the seminar 15 participants gave presentations about their activities in their own countries. Prof Ali Sayigh then chaired the discussion session and closing ceremony where he mentioned that this was the most successful seminar so far in these series.

A group photograph was taken showing the 28 participants and some of the speakers.



PV SHIPMENT GROWTH



EUROPEAN WIND ENERGY INSTALLATION BY APRIL 2001 - MW

(Source: Wind Direction, July 2001)

COUNTRY	END OF 2000	APRIL 2001
Germany	6113	6410
Spain	2235	2567
Denmark	2300	2346
Italy	427	506
Netherlands	446	460
UK	406	413
Sweden	231	258
Greece	189	208
Ireland	118	118
Portugal	100	105
Austria	77	77
France	66	66
Finland	38	38
Belgium	13	20
Luxembourg	10	14
EU - Total	12,769	13,606
Other Countries		
Turkey	19	19
Norway	13	13
Czech Republic	12	12
Poland	5	10
Switzerland	3	3
Romania	1	1
TOTAL	12,822	13,664

GLOBAL WIND ENERGY INSTALLATION BY THE END OF 2000, AND 2001* - MW

AREA	2000	2001	Best Country*
Europe	12972	13814	Germany – 8000
North America	2695	3105	USA – 4000
South & Central America	103	125	Costa Rica – 80
Asia	1574	1754	India – 1500
Pacific Region	221	241	Japan - 300
Middle East and Africa	141	148	Egypt – 90
TOTAL	17806	19187 Expected – 24,000	

* Predicted

Large Machines

Most wind energy industries are geared to produce big machines for use inshore or offshore applications. 2 MW turbines are already in use. Enercon is the first company to erect more than 4 MW machine. The Aurich based company built the foundations for the E-112 gearless 4.5 MW turbine with a rotor diameter of 112 meters. The blades are being produced by Abeking & Rasmussen of Lemwerder. Last April Enron Wind announced two new turbines (3.2 MW with rotor diameter of 104 meters and 3.6 MW with rotor diameter of 100 meter). Nodex announced its 5 MW production with Jacobs Energie and Pro+Pro and it will be erected by the end of 2002.

PHOTOVOLTAIC APPLICATIONS IN INDIA

(Reference: PV-News, July 2001, Volume 20/No. 8)

The Indian power Minister Suresh Prabhu said that during the coming 10-12 years, India needs to increase its electricity by 10,000 MW per year in order to meet the demands. He added that this figure is difficult to achieve using fossil fuels only due to their rising cost. Therefore the Government is thinking to target the renewable energy sources such that 10% of the power will be generated from renewable energy by 2012.

The Growth of PV – Production in India

Year	Solar Cells, MW	PV Modules, MW
90-91	1	1
91-92	1.2	1.2
92-93	2.05	2.3
93-94	2.7	4
94-95	4	7
95-96	4.2	8
96-97	5.2	9.2
97-98	8.3	11
98-99	6.5	9.5
99-2000	9.5	11
2000-2001	14	17

Achievement in PV – Promotion by some Indian Agencies: April 2000 – March 2001

Name of the Agency	Type of the Device			
	Lantern	Street Light	Home Lighting	Others (kW _p)
Maharashtra Energy Development Agency	1500	150	250	13
Gujarat Renewable Energy Development Agency	2000	53	201	Nil
West Bengal State Energy Development Agency	30	100	7450	164
Karnataka State Power & Electricity Department	1000	75	755	Nil
Goa Energy Development Agency	224	19	Nil	Nil
Punjab Energy Development Agency	2321	215	512	N.A.

CALENDAR OF EVENTS

Second EC-BREC /WREN Seminar - Renewable Energy: A strategy for Sustainable Development.

9-11 December, 2001.
Warsaw, Poland

Contact: Dr Grzegorz Wisniewski, Director, EC Baltic Renewable Energy Centre, Institute for Building, Mechanisation and Electrification of Agriculture, RES OPET Poland, Rakowiecka 32, 02-532 Warsaw, Poland, Tel/fax: + 48 22 8484832, 6466850, 6466854, E-mail: grewis@ibmer.waw.pl, http: www.ibmer.waw.pl/ecbrec

Third International Seminar on Renewable Energy Systems and Applications for Executives and Policy Makers

7-8 January, 2002,
Bahrain.

Contact: Prof Waheeb E Alnaser, Dean of Science, College of Science, University of Bahrain, Bahrain, Tel: 00 973-686197, Fax: 00 973-682582, E-mail: waheeb@sci.uob.bh

IRAN/WREN – First International Symposium in Renewable Energy Options.

5-6 March, 2002.

Contact: Dr A Kaabi Nejadian, President of Iranian Solar Energy Society, Shahrake-Bakhteri, P O Box 14155-6398, Tehran, IRAN. Tel: +98-218084771-3, Fax: +98-218086970.

World Renewable Energy Congress – VII,

29 June – 5 July, 2002,

Cologne Congress Centre, Cologne, Germany,

Contact: Prof Ali Sayigh, 147 Hilmanton, Lower Earley, Reading RG6 4HN, UK, Tel: +44 – (0) 118 9611 364, Fax: +44 - (0) 118 9611 365, E-mail: asayigh@netcomuk.co.uk, http://www.wrenuk.co.uk

Sharjah Solar Energy Conference & Regional World Renewable Energy Congress.

23 – 26 February, 2003,
Sharjah, UAE,

Contact: Dr Abdalla A Alnajjar, SSEC-Organizing Committee, University of Sharjah, P O Box 27272, Sharjah, United Arab Emirates. Tel: +(971) 6 505 0551, Fax: +(971) 6 505 0552, E-mail: research-6@sharjah.ac.ae

Third World Conference on Photovoltaic Energy Conversion,

12-16 May, 2003,
Osaka Japan,

Contact: Prof K Kurokawa, E-mail: wcpec3@ec.tuat.ac.jp

World Renewable Energy Regional Congress,

21-25 April, 2003,
Melbourne, AUSTRALIA.

Contact: Dr. A. ZAHEDI, Solar Energy Applications Research Group (SEARG), Monash University, Department of Electrical and Computer Systems Eng., Clayton Campus, Wellington Road, Clayton, Victoria, 3800, AUSTRALIA. Tel.: +61-3-9905 5957, Fax: +61-3-9905 3454, ahedi@eng.monash.edu.au



Renewable Energy MSc.

Faculty of Engineering
Postgraduate Diploma /
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Full-time and part-time

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Further Information and advice can be obtained from the Course Director or the Faculty of Engineering Office:

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Faculty Office: Telephone: +44 (0)1232 366218
E-mail: engineering@ulst.ac.uk
http://www.engj.ulst.ac.uk/SCOBE/renew.html

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- Renewable Design Project

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