



Editorial Board:

Editor:

Mr. Hugh Lockhart-Ball

World Renewable Energy Congress VIII & Expo

28 August – 3 September 2004,
Denver Marriott City Center Hotel,
Denver, Colorado, USA

The 8th World Renewable Energy Congress has attracted many ministers, heads of research establishments and industry. Due to the hard work of more than 80 members of the Technical Committee, 40 plenary speaker papers and more than 800 abstracts covering twenty areas of renewables have been reviewed for presentation during the five days of the Congress. Prior to the opening of the Congress, on Saturday, 28 August, WREN will hold its Annual General Meeting at 9.00 am in the Denver Marriott City Center Hotel. Later, three keynote speakers will outline the renewables policy and achievements of the US Government and industry, followed by a special talk on Energy and Water.

On Sunday, 29 August several workshops will be held including Energy and Poverty Reduction in which representatives from various part of the world will debate this important issue.

The social programme will start on Saturday 28 August with a banquet for WREN members and reviewing editors of Renewable Energy Journal and their partners co-sponsored by Elsevier and WREN.

The Congress Reception, hosted by the Mayor of Denver and NREL, will take place on Sunday evening and all participants are invited to attend. On Sunday morning the Congress three-mile invitation



Prof Ali Sayigh, Chairman of WREC; Ms Anna Talamantez in charge of Abstracts, Papers and Registration. Mrs Ivilina Thornton in charge of Logistics, Hotel Reservation and Registration and Mr Robert Noun Chairman of the Organizing Committee.



Ms Nancy Jo Wiggins, Exhibition Director, Ms Lindsay Smith, Convention Center Coordinator and Mrs Ivilina Thornton in charge of Logistics, Hotel Reservation and Registration, NREL.



Dr Stanley Bull, Co-chairman of WREC, centre right, with several of the US Technical Committee Coordinators at a meeting in NREL.

race will take place. This popular event organised by Dr Larry Kazmerski will start at 8.00 am from the Congress Hotel. All the runners are invited to breakfast after and the prize giving will be at the Congress Reception.

On Tuesday, late afternoon, there will be Reception at the Denver Convention Center where the Congress Exhibition is taking place. At the Exhibition there will be several national stands in addition to many US, South American, Canadian and European Exhibitors. For more details please contact Ms Nancy Jo Wiggins, Infinity Expo

Group, 4 Research Drive, Shelton, CT 06484, USA, Tel: 1-203-925-0004, Fax: 1-203-925-0003, <http://www.energytechexpo.com>

For more details please contact:
Mr Robert Noun, Deputy Associate Director, External Relations, NREL, 1617 Cole Boulevard, MS 1623, Golden, CO 80401 – 3393 USA, Tel: 303-275-3062, Fax: 303-275-3097, email: bob_noun@nrel.gov, Congress Website: www.nrel.gov/wrec

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Ms Ivilina Thornton, NREL, address as Mr Noun, Tel: 1-303-275-3781, Fax: 1-303-275-4320, email: ivilina_thornton@nrel.gov.
Prof Ali Sayigh, WREN, P O Box 362, Brighton BN2 1YH, UK, Tel: 44-1273-625-643, Fax: 44-1273-625-768, email: asayigh@netcomuk.co.uk, WREN Website: <http://www.wrenuk.co.uk>

Important: For those requiring a visa please contact Mr Robert Noun as soon as possible.

New Analysis Projects 20% Renewables by 2020

Berlin, 19th January 2004

New projections show that use of renewable technologies could expand to satisfy 20% of Europe's energy demand by 2020, a substantial increase from their present level. Taking electricity generation alone, the proportion contributed by the five main renewable technologies sources (wind, hydro, photovoltaic, biomass and geothermal) in 2020 will have reached almost 34%.

The longer term assessment of the potential for renewable energy sources in Europe was carried out by EREC - the European Renewable Energy Council - the umbrella group representing renewable industry and trade and research associations, and the key findings were presented in Berlin by Prof. Arthouros Zervos, President of EREC:

- The White Paper target of 12% renewable energy by

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

2010 will be achieved if specific support actions are taken soon.

- The target for 22.1% of electricity from renewables will be met if measures set out in the EU Renewables Directive are fully transposed and some additional measures are taken.
- A contribution from renewables to total energy consumption of 20% by 2020 is possible.

“Renewables are essential in the campaign to tackle climate change and contribute to the further modernisation of the energy sector”, said Prof. Zervos. *“As indigenous sources, renewables also help reduce Europe’s dependence on energy imports and have a positive impact on both regional development and employment. The European renewable energy industry already has a yearly turnover of 10 billion and employs 200,000 people”.*

The Third Conference on Energy and Fuel Conservation in Buildings and Iran/WREN – International Symposium on South/South Networking in Renewable Energy (SSNIRE)

15-18 February 2004, Tehran, Iran

Under the umbrella of WREN, invited representatives, from 20 countries from South America, Africa, Asia and Eastern Europe, attended the International Symposium SSNIRE in Tehran, gave talks on the best practice in



Opening ceremony

renewable energy in his/her country. It will be recalled that under the combined auspices, collaboration and sponsorship of the Third World Network of Scientific Organizations (TWNSO), The Abdus Salam International Centre for Theoretical Physics (ICTP), the United Nations Development Programme (UNDP) and the World Renewable Energy Network (WREN), the first workshop on promoting best practices for renewable energy technology applications in the south at ICTP, Trieste, Italy was held 7-9 October, 2002.

On 17 February 2004 the Third Conference was opened by His Highness Ayatollah Hashemi Rafsanjani, Head of the Expediency Council. His Excellency the Iranian Minister of Petroleum gave the opening address and Prof Sayigh thanked Mr Mehdi Hashemi, Managing Director of IFCO, Mr Sattari and Mr Khalili for

This is the first time that the European renewable energy industry has taken coordinated action to deliver a complete market analysis and projection up to 2020. This new analysis argues that if progress can be achieved to add 6% of additional renewables over thirteen years (1997-2010), then a further 8% over the following ten years (2010-2020) is feasible.

“Targets are an important element in any policy making initiative. Without the targets set down in the renewables White Paper, for instance, the European Union would not have implemented the necessary directives on both renewable electricity and biofuels that followed in its wake. Energy investments are long-term, and planning for the future needs to begin well in advance. Establishing projections such as those presented by EREC is a vital first step”, said Zervos.

their hard work in organizing the Conference and their hospitality and wished the people and the Government of Iran continued prosperity and progress in their endeavours in energy and fuel conservation.

The Conference and Exhibition, with



Some of the invited delegates to the Conference.

more than 100 exhibitors, attracted more than 2800 scientists and technologists in three parallel sessions. On 19 February Prof Sayigh, accompanied by some of the delegates, visited SADID SABA NIROO CO, a joint venture with



One blade of the 650 kW machine at Sadid Saba Niroom Co. in Tehran

EREC

For information please contact: *Oliver Schäfer, Policy Advisor, mob. +32 496 65 28 37*
- The briefing paper “Renewable Energy Target for Europe – 20% by 2020” is available at www.erec-renewables.org

Renewable electricity grew at an annual rate of 4.8% between 1997-2001, and will need to increase that rate to 5.7% over the period up to 2010. The largest input will come from Wind, which by that stage is projected to have reached an installed capacity of 180,000 MW. To reach the overall target for renewable energy, the report indicates that specific support actions should be taken soon to encourage some technologies, such as biomass and solar collectors, that are lagging behind. For instance, political action in the heating and cooling sector has to follow immediately.

the Danish Company Vestas which has installed in Iran more than 120 MW to date and proposes to install an additional 200 MW in the next two years.

Prof Sayigh, Professor M Y Othman, Malaysia, Dr A Kahrobaian - Director General



Prof M Y Othman, Malaysia, Prof Ali Sayigh, His Excellency Dr Reza Amrollahi, Senior Vice Minister of Energy, Mr Morteza Ghanoun, Deputy Director General for International Affairs, Dr A Kahrobaian, the Director of Renewable Energy Office, and the Office Director of Dr Amrollahi

of Renewable Energy and Dr Ahmed Hourii, Lebanon visited His Excellency Dr Reza Amrollahi, Vice Minister of Energy. Dr Reza Amrollahi and Prof Sayigh agreed that the Ministry of Energy, under the guidance of His Excellency, will cooperate and coordinate the 4th International Conference on Fuel Conservation in Buildings - Regional World Renewable Energy Congress and International Exhibition, Tehran, Iran, 13-16 March 2005. It was also agreed that the Ministry will host up to 50 international participants to this major conference.

First World Energy Technology Summit

Paris, UNESCO Headquarters, 10-12 Feb. 2004.

Under the auspices of the UNESCO and with sponsorship of WREN and several international organizations, the three day Conference took place in Paris and at the UNESCO headquarters. There were more than 120 participants from several countries representing UN agencies,

government officials, industry and electricity companies. Here are some reflections by Thomas R. Casten, Chair, World Alliance for Decentralized Energy:

Few conferences enjoy such a wide mix of energy specialists. A great deal of information was exchanged, and most participants modified

some of their views. WTN’s stated goal of causing some serendipitous connections was certainly achieved repeatedly, and we could call the conference a success, closing the books.

The delegates all had specific knowledge and understanding of part of the energy puzzle that was either not passed on to all others, or

was filtered away by the preconceptions of each participant. It would be fascinating to learn what ideas that they believe are key to solving the many world energy problems failed to pass many of the participants' filters. What ideas and concepts would each participant help others to understand and which new ideas have a chance of passing their preconceptions? What key ideas did they accept that were new or took on increased importance? What ideas did they not only reject, but also expect to continue to reject?

Multiple Goals

I detected the following goals:

- Improve energy services to those without access.
- Advance new technologies that produce energy services from renewable sources.
- Deploy renewable energy converters, regardless of economic cost.
- Advance new technologies that convert fuels more cleanly and efficiently to energy services.
- Reduce greenhouse gas emissions.
- Enhance energy efficiency and reduce pollution from all energy production.
- Enhance capital efficiency of providing energy services.
- Enhance end-use energy efficiency.
- Remove barriers to efficiency.
- Mandate energy efficiency, and / or wider use of renewable energy.
- Limit growth to reduce energy system damage to planet earth.
- Profit from producing, selling, deploying, and owning energy service systems.

Classes of Preconceptions:

We were each preconditioned to hear ideas that fit the way we are wired, and we found it nearly impossible to accept ideas that clashed with our preconceptions. Since valuable breakthroughs nearly always overturn preconceptions, it is particularly important to realize how we are wired to hear or not hear various ideas. Here are some of the preconceptions I detected:

- Compassion for less fortunate trumps all else. (Humanists)
- Efficiency is key to all problems. (Engineers)
- Stop environmental damage or nothing else will matter. (Environmentalists)
- Government can and should pro actively solve these problems. (Government employees)
- Bad governance is responsible for most of the problems. (Energy practitioners)
- Free markets will solve the problems if price signals are right and rules fair. (Capitalists)
- Government must overrule markets to solve the problems. (Socialists)
- Energy service approaches tend toward optimal, so solving problems will require new technology or involve economic trade-offs. (Economists)
- The problems are caused by greed of the haves. (Robin Hoods)
- The problems are only interesting if they help my organization increase its profits. (Selfish)

I have over-emphasised the preconceptions on purpose to understand what made each of us deaf to some ideas. Some of these preconceptions



Some participants at a working lunch during the Conference.

are set in stone, but recognizing that our training, career choices and personality types block some ideas more than others is the first step to finding consensus on breakthrough approaches.

Blocked Concepts

The largest block, in my view, is the concept that large industries tend towards optimal in free markets. This core view of many participants predisposes them to believe solutions must involve new technologies or government mandates to sacrifice economics for other goals. The notion that the legal and regulatory tapestry in every country is woven full of threads that are effective barriers to efficiency was new to many, and hard to accept by those responsible for governance. Several participants were interested in this notion, but did not allow the idea to change their preconceived priorities.

The important idea that the present worldwide energy system is hugely sub-optimal in terms of capital cost, pollution, cost of energy and reliability, is uncomfortable for many. The economists find this notion clashes with observed behaviour in most markets. The government energy and regulatory professionals find the idea cheapens their hard efforts. Those committed to deploying renewable energy sources may fear regulatory changes that extend use of fossil fuel, regardless of conversion and delivery efficiency.

The second concept was the extent to which conventional fuels and technologies can be used with double efficiency when placed near load. Many participants seemed to retain a notion that DG is limited to microturbines, fuel cells, PV and small diesel engines. One person told me that China had made real progress in bringing electricity to its people and had not used any DG, which left him questioning the importance of DG to other countries. He was surprised to hear that China's main official thrust has been precisely to deploy conventional generation close to thermal and electrical load where the normally wasted heat is being recycled to provide thermal energy for industrial complexes and high rise apartment buildings.

A third area of misunderstanding remained in the background. Some focused on rural poor remote from the grid, and probably tuned out many of the ideas as irrelevant to rural areas, miles from any economic activity. Others cited studies and statistics showing rural poor migrating to urban areas with little industry or locally available energy. Most countries with these migrating rural poor also have some built up areas and industries, and that sub-optimal energy conversion, delivery and failure to use

waste heat strains those countries' resources, makes it difficult for industries to compete, and so drains resources that could otherwise be used to extend energy services.

We did not wrestle with the choice between deploying \$8,000 per kW for a remote solar system that will operate 20% of the time or using the resources to deploy 8 kW of 85% efficient combined heat and power that will operate over 95% of the time, or deploying 6 kW of generation using recycled energy that will consume no fossil fuel and operate 85% of the time. One solution provides immediate energy services to rural poor far from the grid, but at the lowest capital efficiency. The second approach, CHP, can be located wherever there is a thermal load, is the most capital efficient way to provide incremental energy resources, but uses fossil fuel and requires further investment to reach the rural poor. The third solution, recycling waste, is the most capital efficient way to reduce greenhouse gas emissions, as it produces nearly 30 times as much fossil fuel free power as the solar solution, but also requires added investment to reach the rural poor.

My Preconceptions

I was so disgusted with the US process of lobbying government to subsidize, tax credit or mandate pet energy approaches that I failed to hear the thoughtful efforts of people like Stephen Singer and others to craft government policies that would encourage better energy conversion and end use. The lobbying abuses and resource waste kept me from hearing good ideas on appliance efficiency standards and other sensible mandates.

My 25 years of frustration with needless barriers to more energy efficient conversion have closed my mind to IEA and WEC projections. They seem to project the status quo, and to accept those projections I must accept that all of us pushing for level playing fields will fail. I am willing to listen to the magnitude of problems with sufficient progress built into the projections, but others simply dismiss them out of hand.

Final Thoughts

Those summarising made it clear that each had learned and accepted some new ideas. A common thought was the apparent logic of not betting on any one approach or technology. The world will be ill served by not finding ways to concentrate on highest return approaches. The magnitude of the problem vastly outstrips resources with disastrous consequences.

Against this need for making choices and deploying resources optimally, we must recognize governments' poor record of making technical choices or adapting as technology develops. This reminds me of the wisdom of the comments by James Clark, who suggested all governments systematically examine each law or regulation that imposes barriers to efficiency and ask whether their original social purpose still exists, and if any remaining social purpose could be addressed, with regulations that encourage energy efficiency. This process of letting a thousand flowers bloom is the driver that leads economists to believe free markets tend towards optimization, and will open paths to many energy conversion and delivery approaches.

The 8th Arab International Solar Energy Conference and the Regional World Renewable Energy Congress

Bahrain, 8-10 March 2004

150 participants, representing 42 countries, attended the 8th Arab International Solar Energy Conference and the Regional World Renewable Energy Congress. Nearly 310 research papers were presented during 3 days at Crowne Plaza (Holiday Inn) Convention Center, Bahrain. The Conference was under the patronage of His Excellency Sheikh Abdullah Bin Salman Al



Dr Abubaker Awidat Salem: Organizer of Next WREN Regional Conference in Libya, Prof Ali Sayigh: Chairman of WREC & WREN, Dr Hussain Al-Madani: Dean of College of Engineering, University of Bahrain, Prof Dr Hayfa Al-Masqati, Dean of College of Science, Bahrain University and Dr Ali Al-Karaghoul: Director of Energy Research Centre, Bahrain University.

Khalifa, Minister of Electricity and Water and Chairmanship of Dr. Mariyam Bint Hassan Al Khalifa, President of Bahrain University, and Co-Chairs Professor Ali Sayigh Chairman of WREC and Director General of WREN, and Professor Waheeb Alnaser, College of Science, University of Bahrain. Among the sponsors were

ISESCO, the United Nations University and several national organizations. Ten members of WREN were present from UK, Malaysia, Qatar, Belgium, Germany, Egypt, Australia, USA, India and Morocco. 12 keynote speakers from UK, Canada, USA, Egypt, ISESCO- Morocco, UN University-Japan, Bahrain and Jordan presented



Group Photograph of Bahrain Regional Meeting.

plenary talks at the Conference.

At the closing ceremony the following recommendations were adopted:

1. To send a cable of thanks and gratitude to the King of Bahrain, the Prime Minister, the Crown Prince, the Minister of Electricity and Water and the President of the University of Bahrain for their generous hospitality and sponsorship of this conference and support of renewable energy, science and technologies and their promotion of sustainable energy for cleaner a environment.
2. To continue the encouragement of renewable and clean energy applications in the Arab region through innovation and transfer of technology.
3. To continue support of capacity building efforts including education, training in renewable energy technology and assessment

of environmental impact of energy use.

4. To emphasise the need to use all types of renewable energy technologies without preference to one of them as any technology that utilizes natural renewable resources presents the least damage to the environment and contributes to national prosperity.

5. To appeal to all governments and policy makers for more financial, moral and social



Prof Dr Waheeb Alnaser, Dr Larry Kazmerski, His Excellency Dr (Eng) Mohammed J K Alghatam, Chairman of Board of Trustees, Bahrain Centre for Studies & Research, Bahrain, Prof Ali Sayigh, Prof A H El-Shaarawi, Canada and Dr Ali Al-Karaghoul.

support for renewable energy research, applications and adoption.

6. To confirm that renewable energy has become one of the major energy options, taking into account research requirements, energy efficiency, conservation and cost criteria.

7. The next venue of this conference will be Libya, in January 2006.

British Wind Energy Association

Helen Barnes, 18th December 2003

The British Wind Energy Association (BWEA), the UK's largest renewable energy association with nearly 300 company members, warmly welcomed today's 'Round 2' announcement that fifteen projects, representing 5.4 - 7.2GW of new wind capacity, will be offered leases to develop projects off the coast of the UK.

Details of the sites, together with the developers chosen to build them, were revealed today by the Crown Estate, which leases the seabed around the UK. The sites will be built in three strategic areas of shallow sea: the Thames Estuary; Greater Wash; and the North West. Of the 15 wind farms, three are fully outside territorial waters and include the world's largest proposed offshore wind farm, in the Greater Wash area. They will provide up to 1.2 GW of generating capacity.

Commenting on the historic announcement Marcus Rand, Chief Executive of the BWEA said:

'We have the best wind resource in Europe and today's announcement puts the UK in the fast lane to becoming a world leader in developing it offshore. This is a win, win, win for our industry, our environment and our economy as these fifteen

projects will create thousands of new jobs and provide clean power for one in six UK homes. It is critical that we now work with all stakeholders to ensure these projects quickly obtain consents and the necessary finance to ensure they are built on time. These projects alone should help us achieve at least half the Government's 10% by 2010 renewable target.'

The UK wind industry is widely recognised as playing the leading role in delivering clean renewable power for the nation over the next decade helping us meet the government's target of providing 10% of electricity from renewables by 2010. The industry already has planning consents in place for new wind farms, on and offshore, equivalent to some two and half percent of the UK's total electricity needs (2.5GW). Today's announcement is equivalent to up to a further seven percent of supply (7GW).

Currently 1.2GW of offshore projects under 'Round 1' have been consented. One of these, at North Hoyle, is complete and another, at Scroby Sands, is currently under construction. At present the UK wind industry has an installed capacity of some 640 MW of projects onshore and offshore (including 100 MW commissioned in 2003) and generates clean power equivalent to the requirements of over 400,000 UK households.

1. BWEA is at the heart of wind energy activity in the UK. The trade and professional body for the industry, BWEA membership now stands at 293 companies active in the sector, making BWEA the UK's largest renewable energy body. BWEA represents industry at home and abroad, to Government, regional bodies and local authorities throughout the UK and to the business community, the media and the public. BWEA co-ordinates statistics and intelligence on every aspect of the industry to promote the use of wind power in and around the UK. For further information visit www.bwea.com

2. Full details of the Crown Estate's announcement can be found at <http://www.crownestate.co.uk>. The announcement includes a full list of developers, size and capacity of the wind farms and location of the sites. A map outlining the location of the sites can also be found at the website and is available as a pdf file. Contact: Giles French, Crown Estate: Tel: 020 7210 4823.

3. B-Roll, including interviews with the Prime Minister and Energy Minister Stephen Timms, and footage of the North Hoyle offshore wind farm, and construction of wind turbines, is available from Helen Barnes at the BWEA. Tel: 020 7689 1968.

Visit of the Director General of WREN to ISESCO

Prof Ali Sayigh visited ISESCO on 24-26 March 2004 and met His Excellency Dr Abdulaziz Altuwajri, the Director General of ISESCO and Dr Mohamed Hashem Falougi, Deputy Director General of ISESCO and Dr Faiq Billal Director of Science Directorate.

Prof Sayigh reaffirmed his invitation to Dr Altuwajri to address the opening session of the World Renewable Energy Congress and to chair a session on 30 August, 2004. Prof Sayigh then requested ISESCO to become involved in the 2005 First World Hydrology and Sustainable Development Congress and Exhibition which will be held in The Netherlands in December



His Excellency Dr Abdulaziz Altuwajri and Prof Ali Sayigh during their meeting at the ISESCO Headquarter on 27 March, 2004.

and is co-organised by WREC and Inter Expo. Dr Altuwajri expressed the willingness of ISESCO to be partner in this important event.

Dr Billal and Prof Sayigh discussed WREN/ISESCO cooperation and their joint programmes to the end of 2006. They also put forward a plan to establish a refereed international journal, the ISESCO Journal of Science and Technology, to be launched in July 2004.

Currently ISESCO carries out more than 100 programmes each year in science and technology and involves more than 60 countries in their programmes.

SOUTH-SOUTH NETWORKING AND COOPERATION ON RENEWABLE ENERGY AND SUSTAINABLE DEVELOPMENT

Introduction

Energy is required in almost all aspect of every day life including agriculture, drinking water, lighting, health care, telecommunication, and industrial activities. Presently, the demand of energy is mainly met by fossil fuels (i.e. coal petroleum and natural gas). However, the world fossil fuel production has already started to decline. In the seventies, the oil crisis forced many to look for alternative energy sources and in the nineties, the global environmental concerns created the awareness of the need to use clean energy. Moreover, the use of fossil fuels has many side effects; combustion produces pollution, acid rain and global warming. Conversion to clean, environment friendly energy sources such as biomass, solar, ocean thermal, wind, currents, tidal, wave, and geothermal, would enable the world to improve the quality of life throughout the planet, thus contributing to sustainable development.

Objectives

- Enhance networking and cooperation between south-south nations in the field of renewable energy and sustainable development.
- Facilitate information dissemination of the best practice of renewable energy applications.
- Develop a comprehensive and up-to-date database on renewable energy activities and energy profiles of south-south nations.
- To encourage sustainable development by the use of renewable energy technologies and to share experience among south-south nations of successful applications of such technologies.
- To promote renewable energy and energy efficient technologies.
- To facilitate capacity building in the field of renewable energy and sustainable development among south-south nations.
- To identify the names, addresses, emails, web-sites of leading contact persons in renewable energy within the south-south nations.
- To identify centres of excellence and training in renewable energy.

Regional Representatives

The regional representatives of the South-South Networking and Cooperation on

Renewable Energy and Sustainable Development are:

- South East Asia – Prof Mohd Yusof Othman
Iran/Pakistan/Afghanistan/Armenia/Arzerbagian – Eng. Sattari
Uzbekistan/Kazakstan/Khrgyztan/Turkmenistan – Prof D. A. Abdullaev
Yemen, UAE, Qatar, Saudi Arabia, Bahrain, Kuwait – Prof Ali M Al-Ashwal
Central America and the Caribbean – Prof Shyam Nandwani
Western and Central Africa – Prof A. S. Sambo
Eastern and Southern Africa – Dr. J. T. Mailutha
Northern Africa – Dr Abu Bakar Awadit Salem
India – Mr Pradeep Chaturvedi
China – Prof Yuwen Zhao
Bangladesh/Sri Langka/Nepal/Maldives – Prof. A. K. M. Sadrul Islam
Egypt/Sudan/Djibuti/Somalia – Prof. Said H. El Hefnawi

List of Founding Members

At the Iran/WREN International Symposium on South-South Networking and Cooperation on Renewable Energy, Tehran on 15 February 2004, the formation of the network was formalized. 20 participants representing Iran, Turkey, Costa Rica, Indonesia, Malaysia, Sri Langka, Bangladesh, Libya, Lebanon, Yemen, Nigeria, the United Kingdom and Germany, attended the meeting. The founding members are:

- Prof El Bassam (Germany) – Associate Member
Prof Said H. El Hefnawi (Egypt)
Prof Mohd Yusof Othman (Malaysia)
Prof Kamaruzzaman Sopian (Malaysia)
Ms Herlani Suharta (Indonesia)
Mr. Asoka Abeygunawardana (Sri Lanka)
Eng. M. Khalili (Iran)
Dr. Ahmad Hourri (Lebanon)
Dr Abu Bakar Awadit Salem (Libya)
Prof A.S. Sambo (Nigeria)
Prof A.K.M. Sadrul Islam (Bangladesh)
Prof Ali M Al-Ashwal (Yemen)
Prof J.F. Nicol (UK) -Associate Member
Prof Ali Sayigh (UK)
Prof D. A. Abdullaev (Uzbekistan)

Prof D. Inan (Turkey)

Dr Kabi Nejadian (Iran)

Eng. Sattari (Iran)

Prof. Shyam Nandwani (Costa Rica)

Members selected the organizing committee:

Honorable President: Eng. Mehdi Hashemi Rafsanjani – Managing Director of Iranian Fuel Conservation Organization (IFCO)

Chairman: Professor Ali Sayigh – Chairman of World Renewable Energy Congress & DG of WREN

Deputy Chairman: Eng. M. Khalili - IFCO

Secretary: Professor Kamaruzzaman Sopian – Director, Advanced Engineering Centre, Universiti Kebangsaan Malaysia

A letter of appointment for the members and the organizing committee will be sent shortly.

Activities of the South-South Cooperation on Renewable Energy and Sustainable Development 2004-2005

Publication of the Proceedings of the South-South Cooperation on Renewable Energy, Tehran, 15-16 February 2004. A format for the papers was supplied by Prof Ali Sayigh. The proceedings will be a special edition of Renewable Energy Journal.

Compilation of the lists of activities and institutions (governmental and non-governmental organizations) involved in renewable energy.

Establishment of a website to be linked to the current WREN website.

Publication of a history Renewable Energy in South-South nations.

Publication of R&D directory of graduate opportunities for South-South Cooperation.

Facilitation of funding for demonstration projects from international organization such as the EC and UNDP-GEF, ISESCO and so on.

Organization of seminars, workshops and capacity building programmes.

Encourage training among member countries, and the creation and identification of centres of excellence in renewable energy.



Renewable Energy MSc.

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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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Visit to Qatar



Dr A Hamid Marafia, Engineering College, Prof Sayigh, Her Excellency Sheikh Al-Misnad, President of Qatar University and Dr Siham Y Al Qaradawi, Chemistry Department.

13-15 March 2004

Prof Sayigh visited Qatar and met several members of WREN and the President of Qatar University. On 13 March he gave a talk on the future of renewable energy at the University of Qatar organized by Dr Siham Y Al Qaradawi, Head of Chemistry. WREC is planning meetings in cooperation with Qatar University and others during 2005 & 2006.

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Further information contact:

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www.nottingham.ac.uk/sbe/postgraduate/renewable.htm

WIND POWER INSTALLATION by end of 2003 in MW

EU – 15 Countries		ACCESSION States		REST of the World	
Germany	14609	Poland	57	USA	4646
Spain	6202	Latvia	24	India	1702
Denmark	3110	Czech Rep.	10	China	468
Italy	904	Hungary	3	Japan	384
Netherlands	873	Estonia	3	Australia, N. Z. & S.E. Asia	68
United Kingdom	649	Slovenia	3	Egypt, M E & Africa	149
Austria	415	Cyprus	2	Latin America & South	139
Sweden	399	Lithuania	0		
Greece	375	Malta	0	Sub TOTAL	7556
Portugal	299	Slovakia	0		
France	239	Sub TOTAL	102		
Ireland	186	Other European Countries			
Belgium	68	Norway	198		
Finland	51	Ukraine	57		
Luxembourg	22	Switzerland	5		
Sub TOTAL	28,401	Romania	1		
		Sub TOTAL	261		

World Photovoltaic Cell / Module Production - MW

Country	1999	2000	2001	2002	2003
USA	60.8	74.97	100.32	120.6	127.0
Japan	80.0	128.60	171.22	251.07	331.0
Europe	40.0	60.66	86.38	135.05	213.0
ROW	20.5	23.42	32.62	55.05	74.0
TOTAL	201.3	287.65	390.54	561.77	745.0

CALENDAR OF EVENTS

19th European Photovoltaic Solar Energy Conference and Exhibition, 7-11 June 2004, Palais de Congress, Paris, France. Conference Information and Exhibition: Enquiries are provided by: WIP-Munich, Sylvesterstr. 2 D-81369 Munich, Germany, Tel +49 89 - 720 12 735, Fax +49 89 - 720 12 791 wip@wip-munich.de, or eta.fi@etaflorence.it, www.wip-munich.de, www.pholtovoltaic-conference.com

World Renewable Energy Congress VIII & Expo, Denver, Colorado, USA, 28 August – 3 Boulevard, MS 1623, Golden, CO 80401, USA. Tel: 303-275-3781, Fax: 303 - 275 – 4320, Email: ivilina_thornton@nrel.gov or Prof Ali Sayigh, P O Box 362, Brighton BN2 1YH, UK, Tel: 44 – (0) 1273-625-643, Fax: 44 - (0) 1273-625-768, E-mail: asayigh@netcomuk.co.uk, Website: <http://www.wrenuk.co.uk> or www.nrel.org/wrec

World Renewable Energy Congress\British Council-International Seminar in Britain, RENEWABLE ENERGY, ENERGY POLICY, SECURITY, INNOVATION, INDUSTRY and SUSTAINABILITY. 16-23 October 2004 – Old Ship Hotel, Brighton, United Kingdom. Contact: Prof Ali Sayigh, P O Box 362, Brighton BN2 1YH, UK, Tel: 44 – (0) 1273-625-643, Fax: 44 - (0) 1273-625-768, E-mail: asayigh@netcomuk.co.uk, Website: <http://www.wrenuk.co.uk>

The 4th International Conference on Fuel Conservation in Buildings - Regional World Renewable Energy Congress and International Exhibition, Tehran, Iran, 13-16 March 2005. Contact: Mr Khalili, No.14 Sayeh Street, Valye Asr Avenue, P O Box 19395-1477, Tehran, Iran. Tel. 98-21-8888693, 98 21 8879565, Fax. 98 21 8879565, Email: hamayesh@ieeo.org

World Renewable Energy Congress - Innovation in Europe (Regional Meeting), 22-27, May 2005, Aberdeen, Scotland. Exhibition and Conference Centre, Aberdeen, Scotland, UK. Contact: Dr M S Imbabi, Chairman of the Organizing committee, School of Engineering & Physical Sciences, The University of Aberdeen, King's College Aberdeen AB24 3UE, Scotland, United Kingdom. Tel. +44 (0)1224 272506, Fax. +44 (0)1224 272497, E-mail: m.s.imbabi@abdn.ac.uk

World Renewable Energy – Regional Conference and Arab Solar Energy Society Meeting, Tripoli, Libya, January 9-12, 2006.