# SUSTAINABLE ENERGY NEWS

Newsletter for INFORSE International Network for Sustainable Energy. No. 23, November 1998

# Desertification Theme

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*is a worldwide NGO network formed at the Global Forum in Rio de Janeiro, Brazil, June 1992.*

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*Photo on the front page: Tumble Weed Caught on Fence, Windmill and Rainstorm Behind in Karod Desert S.Africa*
*Photo from: Naphne Christelis, Environmental Images, UK.*

# Combat Desertification with Renewable Energy

Photo by: Gunnar Boye Olesen

The International Convention to Combat Desertification defines the problem as "the degradation of the land in arid, semi-arid and subhumid dry areas caused by climatic changes and human activities". Desertification threatens one fifth of the world's population and affects one fourth of the earth's surface.

Geographically, the problem is widespread, particularly in Africa, Asia, and North America. The consequences, such as poverty, migration, etcetera, are well known, but desertification also affects the most developed countries, even if these fail to recognise the seriousness of the problem.

It has become clear that, even if desertification is not a worldwide phenomenon, it remains a worldwide concern.

Since the Rio summit, which gave birth to the Convention, the signatory countries have launched a major information campaign to direct towards desertification the deserved attention. The adoption of the convention in Paris in 1994 and its ratification in 1996 further enabled signatories to engage the public in drawing up action plans at national, regional, and local levels.

This novel approach, which is participatory and which builds partnerships, is the reason for the great interest taken in the convention by non-governmental parties.

As is usual in a process of this proportion, the countries have held a series of meetings to draw up viable solutions to the problem. The first meeting was held in Rome, Italy from 29th September to 10th October, 1997; the second will take place in Dakar, Senegal from 30th November to 11th December, 1998.

The official agenda focuses on political and institutional aspects of desertification. Parallel to that program, NGOs meet to discuss, among other subjects, the technologies of new and renewable energy sources.

This is in line with the provisions of the convention, which emphasize the need to promote "appropriate technologies".

Renewable sources of energy, particularly solar energy, are already viable alternatives to power the provision of water and energy to the people in rural areas affected by desertification. Here, the overuse of biomass resources for energy purposes has serious consequences for the environment.

It is necessary to promote the use of alternatives that are ecologically sound, economically viable, and socially acceptable.

This connection between renewable energy sources and the battle against desertification gives the INFORSE network an additional reason to participate in the debates and the conference that will take place during the coming days.

*By Secou Sarr*
ENDA Energie, Senegal
INFORSE Regional Coordinator

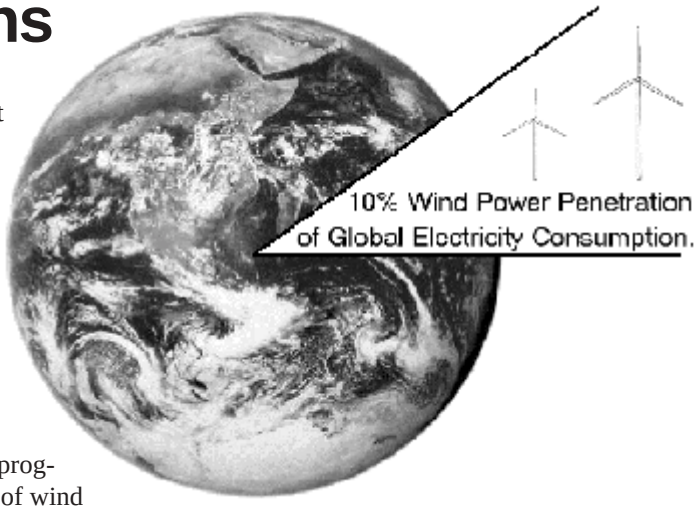
# INFORSE Coordinators' E-mail Meeting

**January 18-22, 1999 is the date for the next INFORSE Coordinators' Meeting. It will be organised as an e-mail conference, following the decision of the 1997 meeting of only having coordinators meet in person every second year.**

On the agenda will be the follow-up and status of the INFORSE Action Plan for 1998-99, including INFORSE activities towards CSD9, the UN Commission for Sustainable Development's 9th Session, which is slated for 2001, and is specially dedicated to sustainable energy; development of South-South-North Cooperation projects; and appointment of national focal points.

The meeting will include discussion of proposals from the INFORSE regions as well as from individual INFORSE member organisations. Proposals for the meeting should be sent to the Secretariat (see page no. 2), and must be received no later than January 8. Proposals should be marked "For Coordinators' Meeting '99" and preferably sent by e-mail to inforse@inforse.dk with a copy to the nearest coordinator.

# INFORSE Climate Actions




During the Climate Convention negotiations, that will take place on November 2-13, INFORSE will be active in a number of initiatives:

♦ The Clean Development Mechanism (CDM) is the focus of a workshop on 2 Nov. and of policy work. The aims are to increase NGO involvement in CDM projects as well as to increase the likelihood that CDM projects will decrease global greenhouse gas emissions not just on paper, but in the real world.

♦ Actions for development of renewable energy in large scale with a press conference on wind power on 6 Nov. (see below) and a workshop on 12 Nov. about $CO_2$ reductions through large-scale use of renewables.

*Information: INFORSE Secretariat (see p.2) and REJIMA, Mario Bravo 1029 piso 4 depto. A, 1175 Buenos Aires, Argentina, ph/fax:+541-963-0722, e-mail: rq@rejima.uba.ar.*

## Global Action Plan: 10% Wind Power

In connection with INFORSE ideas about large-scale renewable energy, the Danish INFORSE member, Forum for Energy and Development, proposed a "Global Action Plan for Wind Power" with the target of obtaining a sustained 10% of the global electricity supply from wind power by 2017. The action plan was made public at a press conference in Buenos Aires on 6 November. It includes the following major elements:

♦ Increased installation of wind turbines in developed countries, with binding targets for countries that have good wind resources and with a mandate to establish conditions favourable to investment in wind-energy systems by local communities, utilities, and others.

♦ Establishment of programmes for transfer of wind power technology to developing countries and to countries in transition.

♦ Financing from international institutions for large-scale implementation of wind power in developing countries, including use of the CDM when it has been established.

Countries that are currently leaders in the use of wind power, e.g., Denmark and Germany, are urged to play a major role in the plan by supporting pilot actions. The plan should be part of a future global climate strategy and will be proposed for CSD9* in 2001.

The plan is based on a report entitled, *"Ten Percent of the World's Electricity Consumption from Wind Energy - Is That Target Achievable?"*, in which two scenarios are analyzed:

♦ "recent trends" with a tripling of installed capacity 1997-2002 and continued supportive framework conditions, including fair access to electricity grids and support for technology transfer. This will lead to a 10-fold increase of wind power capacity 2002 - 2012, and another 5-fold increase 2012 - 2026, where it is assumed that 1 mill. MW of windturbines will cover 10% of world electricity demand.

♦ "international agreements" with a tripling of installed capacity from 1997 to 2002. The above-mentioned supportive framework is to be augmented by international agreements with targets for all countries/regions as well as with funding for technology transfer and investments. In this scenario, it is assumed that 1 mill. MW of windturbines will cover 10% of the world electricity demand by 2017 and that the growth will continue , reaching 2 mill. MW shortly after 2030.

The second of these scenarios is the basis of the proposed plan. If it is realised, $CO_2$ reductions in 2010 will reach 232 Mton of $CO_2$, equal to 30% of the 775 Mton $CO_2$ reductions that the Kyoto Protocol stipulates for developed countries for the period 1990-2010. By 2025, $CO_2$ reductions from wind power will amount to 2,500 Mton, over 10 times that of 2010.

*Source: Report by BTM-Consult, Denmark. See also http://www.inforse.dk/.*

*CSD9 is the 9th session of the UN Commission for Sustainable Development. This session will be dedicated to sustainable energy.

# Problems Call for Global Action against Desertification

**Desertification is about Trees, not Sand! - View from Africa**

One of the most pressing problems facing Africa today is the disappearance of forests and topsoils, and the erosion of pasture and arable lands: desertification. Desertification is a worldwide phenomenon, but the situation in Africa is among the worst.

One root cause is poverty in rural African zones. Wood is used as the basic source of energy; it is inefficient but it is available. The consequent loss of trees brings about degradation of the soil, and the land becomes spoiled for agriculture. The result is more poverty, leading to heavier reliance on trees for fuel, and so on.

One of the main consequences of this poverty is steady large-scale migration from poor rural areas to the urban centres of Africa. This brings its own problems, with urban population growth rates between 5% and 9% around the continent, an urban infrastructure unable to sustain the growth, and a rural population relying more and more heavily on the urban émigrés. To tackle desertification is to go to one of the roots of social problems in Africa (and elsewhere) today.

*(Source: ENDA-tm, Senegal)*

**Desertification in Numbers**

More than 6.1 billion hectares, nearly 40 % of the Earth's land area, is 'dryland'. Out of this, about 0.9 billion hectares are hyper-arid desert. Of the remaining 5.2 billion hectares, 3.6 million hectares are potentially productive 'dryland' , which consist of arid, semi arid, dry sub-humid type of lands. These areas are presently threatened by human induced land degradations i.e., desertification. The annual rate of desertification is about 10% in arid lands, 1% in semi-arid lands, and 0.1% in dry sub-humid lands. This process leads to an annual increase of lands affected as follows: 156.9 million hectares in arid areas, 23.05 million hectares in semi-arid areas, and 1.3 million hectares in dry sub-humid areas, making a total of 181.2 million hectares increase per year throughout the drylands of the world. These give an average rate of current desertification of 3.5% per year.

Over 250 million people are directly affected by desertification, and 1 billion, 1/6th of the world population, are at risk.

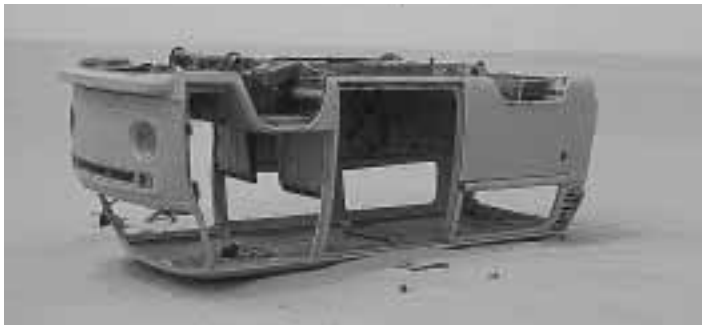
**Africa**

Drylands in Africa, including hyper-arid deserts, comprise 1,959 million hectares, or 65% of the continent, and about one third of the world's drylands. One third of this area is uninhabited hyper-arid desert, while the remaining two thirds have a population of about 400 million (two thirds of all Africans). Desertification is occuring at moderate or high levels in 1.9 million hectares (18%) of irrigated croplands, 48.86 million hectares (61%) of rainfed croplands, and 995.08 million hectares (74%) of rangelands.

Major droughts regularly affect larger portions of the drylands, leading to increased poverty and sometimes substantial food shortages. With each drought cycle, desertification increases. Other factors contributing to desertification include uncontrolled population growth, inadequate agricultural practices, and increase of livestock beyond the carrying capacity of the land.

*Source: UNEP,*
*Report of the Executive Director.*
*http://grid2.cr.usgs.gov/des/*

| Humans induced degradation of drylands | Type of degradation | Million hectares | % of total drylands excl. hyper-arid deserts |
|---|---|---|---|
| Degraded croplands | Soil and vegetation | 259 | 4.9 |
| Degraded rangelands | Soil and vegetation | 757 | 14.6 |
| Degraded rangelands | Only vegetation degradation recorded | 2576 | 50.0 |
| **Total degraded drylands** | | 3592 | 69.5 |



# UN Actions Convention to Combat Desertification

**Short history towards COP-2**

In the 70's, the international community recognized that desertification is a major economic, social, and environmental problem of concern to more than 100 countries in all regions of the world.

In 1977, the United Nations Conference on Desertification (UNCOD) adopted a Plan of Action to Combat Desertification (PACD). Unfortunately, despite this and other efforts, the United Nations Environment Programme (UNEP) concluded in 1991 that the problem of land degradation in arid, semi-arid, and dry subhumid areas had intensified, although there were "local examples of success".

As a result, the question of how to tackle desertification was still a major concern for the 1992 United Nations Conference on Environment and Development (UNCED), which was held in Rio de Janeiro. The Conference supported a new, integrated approach to the problem, emphasizing action to promote sustainable development at the community level. It also called on the United Nations General Assembly to establish an Intergovernmental Negotiating Committee (INC-D) to prepare, by June 1994, a Convention to Combat Desertification (UNCCD). The Convention was adopted in Paris on 17 June, 1994, and opened for signature there on 14-15 October, 1994. 140 countries have signed the Convention so far, and it entered into force on 26 December, 1996, 90 days after the 50th ratification was received. The Conference of the Parties (COP), which is the Convention's supreme body, held its 1st session in October, 1997 in Rome, and the Convention's institutional and procedural arrangements were established.

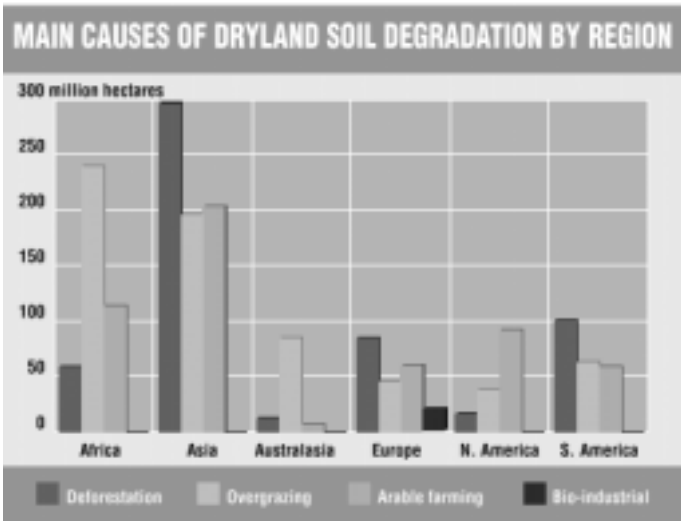
**The Agenda for COP-2**

The second session of the Conference of the Parties (COP-2) will be held from 30 November to 11 December, 1998 in Dakar, Senegal.

The COP-2 will focus on the Convention's implementation. At the first time, the Governments will report on their national efforts. An important innovation will be added to for the UN system: the Conference will feature two half-day sessions organized by non-governmental organizations (NGOs).

Another key issue is that of financial and technical support. Under the Convention, a Global Mechanism will try to ensure that every country that needs international support has full access to information about multilateral and bilateral sources. Delegates will also discuss relations with the Global Environment Facility.

The COP's Committee on Science and Technology will discuss benchmarks and indicators for measuring progress achieved and conclusions on the application of traditional knowledge.

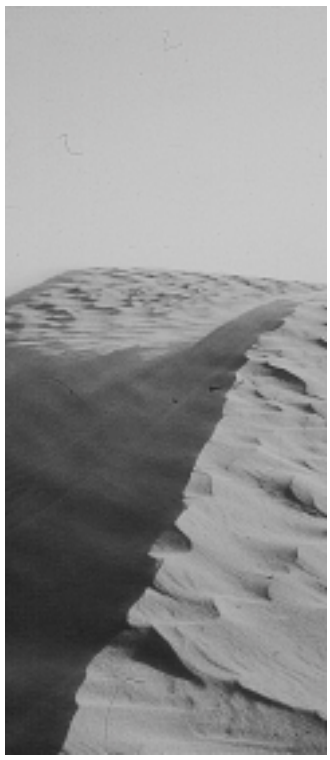



Source: FAO

**Financial Losses of Desertification in the world:**

The loss of productive capacity (income foregone) direct on-site: US$ 42 billion /year.
The indirect off-site and social cost: 2-3 or 10 times higher than the direct loss.

*Source: UNCCD*
*http://www.unccd.ch./,*
*fax: +41-22 917 9030/1,*
*email: secretariat@unccd.ch.*



# NGOs & COP-2 Events and Activities

**The following NGO events are scheduled and organised by International Network of NGOs on Desertification (RIOD):**

♦ **Before the COP-2**

- NGO Preparatory Meeting, November 28-29, Hotel Ngor Diarama.
- INFORSE NGOs' Meeting November 29, afternoon/evening.

♦ **During COP-2**

**November 30 – December 11, 1998.**

- Permanent exhibition: "Desertification in Daily Life".
  All NGOs are invited to send material they intend to exhibit. (publications, audio-visual material, posters, photos, technologies of renewable energy, rational energy use.)
- The Non-Governmental Actors' Forum
- Publication of Eco Newsletter
- The RIOD retreat, December 5-6
- "Open Dialogue" Session between NGOs and Party countries. 15:00 - 18:00 on December 3 and 10.

♦ **After COP-2**

- RIOD Global Meeting March, 1999.

**NGO Preparatory Meeting**
November 28-29, 1998.
The objectives are:

♦ Encouraging each NGO to draw up notes reflecting the general positions of the non-governmental society in relation to each issue on the agenda. Emphasis will be on the themes to be defended during the 2 half-days of "open dialogue" with official delegations.

♦ Contributing to decision taken by Party countries on, e.g., raising financial resources.

♦ "Warm up session" in order to bring all participants up to the same awareness level. For this, resource persons will be selected from amongst the participants to give presentations to the "big novices".

♦ Thematic groups will be formed and their co-ordinator designated.

**"2 half-days Open Dialogue" Session between NGOs and Party countries**
Similarly to COP-1, held in Rome in October 1997, a special "open dialogue" will be organised by NGOs which will be part of the official program of work at a plenary session. At COP-1, the NGOs used the opportunity to stress the need for partnerships between the various segments of society in order to carry out action programmes to combat desertification. The Party countries deemed the exchanges with NGOs so fruitful that they decided upon the inclusion of two half-day "open dialogue" sessions with NGOs in the official agenda at COP-2.
Moreover, they asked NGOs to develop their ideas for institutional mechanisms for large-scale partnerships (decision 27/COP-1).
The objectives are:

♦ Presentations of non-governmental stakeholders (rural producers, women and youth movements, non-governmental and community organisations, etc.) about their impressions of participation in action programs.

♦ Proposing strategies for strengthening the participative approach.

♦ Proposing several decisions or resolutions on, e.g., the participation of non-governmental actors and the effective raising of financial resources.

**The Non-governmental Actors' Forum Workshop on Renewable Energy**
NGO forum will be an arena for parallel workshops. It is proposed to hold a workshop on the theme, "Renewable Energy Technologies in the Fight against Desertification."

**Publication of Eco**
The 'Eco' newsletter has been published regularly since the Rio conference during the negotiation session of the various conventions on the environment. The newsletter is a vector of non governmental actors' opinions on the issues at hand. It is a lobbying tool which has been used by all parties, both from the North and South.

*More information: ENDA TM*
*Ph: +221-8-225983/-8222496,*
*fax: +221-8-217595, http://www.enda.sn/energie/.*

# Solutions UN Action Program, INFORSE Campaign

**UN Action Programs**

The Convention to Combat Desertification will be implemented through action programs on regional and national levels.

The 20-year UN program requires about US$ 4.5 billion a year, or US$ 90 billion in total, of which developing countries in need of financial assistance would require US$ 2.4 billion a year. The Convention promises to dramatically reshape the process of seeking funding. Another radical departure is the strong emphasis on a "bottom-up" approach with strong local participation in decision-making. Traditionally, local communities have been relatively passive participants in development projects. Now the Convention puts them on an equal footing with other actors in the development process. Communities and their leaders, as well as NGOs, are important partners in formulating the action programs. They are equally important in carrying out the actions. For this innovative and complicated process to work, awareness campaigns may be needed to inform people about the new opportunities presented by this Convention.

*Source: left article: UNCCD*
*http://www.unccd.ch./,*
*fax:+41-22 917 9030/1,*
*email: secretariat@unccd.ch.*

*Source right article:*
*ENDA TM Energie and INFORSE*
*http://www.enda.sn/energie/.*

**Sustainable Energy**
**Vital Element of a New Strategy**

To combat desertification, there is a need to rethink all energy policies. Using renewable energy sources for arid areas, especially in developing countries, is an obvious choice to meet the energy needs. Populations in arid areas depend on biomass, primarily fuelwood, consequences include environmental degradation, deforestation, and desertification. The new energy policy must include large contributions of solar and wind energy as well as energy conservation techniques:

- photovoltaic panels producing electricity and/ or pumping water,
- wind mills for pumping water,
- wind power plants producing electricity,
- energy crops,
- rational use of fuelwood by efficient ovens,
- energy efficient equipments.

These energy techniques must be adapted to meet local needs and demands. Photovoltaic sources are not only less costly than many of the traditional alternatives, but they also correspond to the needs of people in rural areas and arid zones. Sound management of combustion of fuelwood is needed. Problems have to be addressed concerning new fuel-efficient stoves.

*Photos by: Gunnar Boye Olesen (pages 4,5,8), Greenpeace International (page 6).*

## INFORSE COP-2 Actions:

**The International Network for Sustainable Energy (INFORSE) is actively participating of COP-2:**

- INFORSE organises an INFORSE NGOs' Meeting November 29, Dakar.
- INFORSE participates on the Exhibition and in the Workshop on Renewable Energy. Distributes Sustainable Energy News.

*More information: FEU/INFORSE,*
*e-mail: inforse@inforse.dk,*
*http://www.inforse.dk/, fax: +45-33121308.*

**Public Meeting: "The Forgotten Convention", Copenhagen, Denmark.**
**November 19, 1998, 13.00-16.00.**

The event is organised by FEU on behalf of INFORSE with the participation of UNSO, UNEP and ENDA, Senegal.

The issues are: Why should desertification be of any concern to the industrialised countries? Can the UN Convention provide a suitable framework for solving the energy needs in areas affected by desertification? How can sustainable energy in practice contribute to solving the energy needs in areas affected by desertification?

*Photo by: BP Solar*

# Warm Welcome for Biogas Plants in China

*Edited from articles provided by Wu Libin, China Biogas Society (CBS).*

*Co-authors are Zhang Anrong (CBS); Wen Shiding, Biogas Research Institute of Ministry of Agriculture; Pei Li, China Association for Science and Technology.*

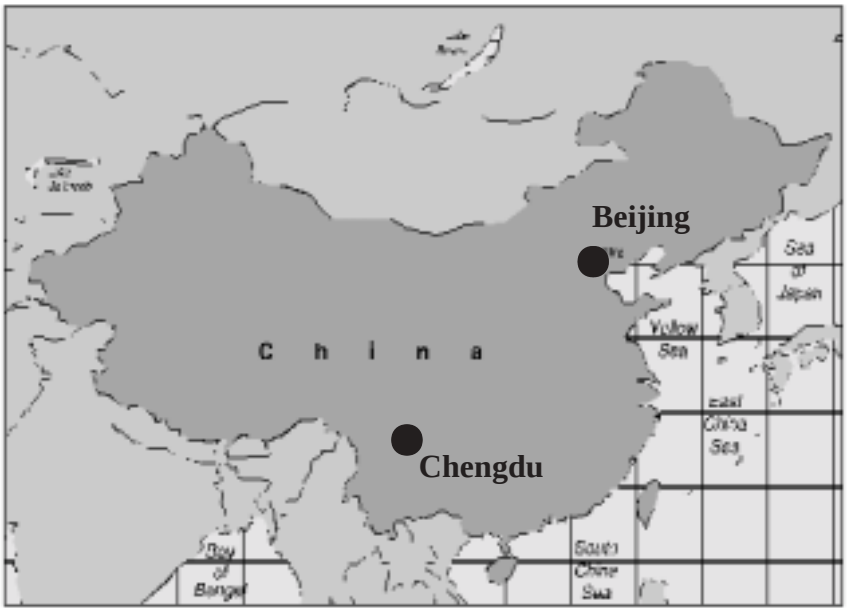
**The China Biogas Society is looking for new cooperations. Biogas technology plays an increasingly important role in China.**

**This is a result of more than 50 years of effort, the last 10 of which have seen concentrated research and 200 demonstration projects.**

**Since 1990, the number of household digesters in China has grown by 200,000 annually.**

**5.7 million household digesters supply 25 million people in the country`s rural areas. 35,700 urban biogas septic systems treat the domestic waste water.**

*A Chinese Biogas Septic System with 120 m³ under construction in Chongzhou City, Chengdu, Sichuan, China, September 1998. Photo by: Wu Libin, CBS.*




## Research Leading to Progress

In the last 10 years, more than 10 universities and institutes in China have taken part in the research and exploitation of anaerobic digestion technology to treat organic waste, to control environmental pollution, and to produce energy. The application of the results has led to additional development in the field.

The government, in cooperation with the China Biogas Society, financially supports and organises the research, design, marketing, and technical training as well as stipulation of the standards and norms to popularize biogas digesters.

## Biogas for 5.7 Million Households, 25 Million People

Various small, highly efficient digesters, each with a capacity of about 6m³, were warmly welcomed by farmers. Since 1990, more than 200,000 new household digesters have been built in China each year. By the end of 1995, there were 5.7 million household digesters in the country, of which 2.2 million are in Sichuan province, where the digesters are the most popular. 25 million people in rural areas have been able to use biogas as high-quality fuel, which greatly improves their lives. The construction of digesters in rural areas gained great impetus from the 100 model-county projects built during 1991-1995 in counties with varying levels of economic development, weather and natural conditions. Between 1995-2000, another 100 model projects were chosen for further development.

## 84,000 Households Enjoy Biogas from 600 Large and Middle-sized Biogas Plants

Projects for the production of biogas from organic waste have been adopted widely by poultry- and cattle farms, breweries, sugar refineries, and pharmaceutical factories. More than 600 biogas projects have been built all over the country with a total capacity of 220,000 m³ and a supply of biogas for 84,000 households, the largest of which is the biogas project of Nanyang Distillery in Henan province. It has two anaerobic digesters of 5,000 m³ and a gas storage tank of 10,000 m³ built in 1987. It produces 40,000 m³ of biogas per day and supplies gas fuel for 20,000 city households.

## 357,000 Urban Biogas Septic Systems Treat 2 Million People's Sewage

Since the mid 1980's, the research on the use of anaerobic digestion technology in sewage treatment in medium-size and small towns has accelerated. Related state departments have stipulated standards for various types of biogas septic systems that have been effective in at least 10 provinces of southern China. By the end of

1995, 35,700 biogas septic systems had been built, the total capacity of which amounted to 1.38 million $m^3$, with the ability to treat sewage water for more than 2 million people and an annual output of 17.6 million $m^3$ of biogas to provide 22,000 households with high-quality fuel.

## 5 % Harvest Gain

The utilization of the digested residue is one of the most important parts in the strategy of sustainable agricultural development. In China, besides being used in cooking, biogas also powers electricity generation, incubation, retardation of fruit spoilage and grain storage. The digested slurry is used in pig- and fish farming. Soaking crop seeds in the digested slurry has been popular as well. In 1995, some 730,000 hectares of crops were grown using this technique, which resulted in an increase of 5% in the harvest. When digested sludge is used in the culture and cultivation of mushrooms, vegetables, and fruits, the output is increased. As a high-quality, highly efficient fertilizer, the slurry has other organic effects besides the improvement of soils. It also decreases plant diseases and pests, thus improving the quality and yield of the crops. 60% of the digester users in the south adopted this comprehensive utilization. More than 100,000 households in the north adopted the "north rural energy-ecology", which combines a digester, a pig's sty, a lavatory, and a plastic-film-covered greenhouse. The result is that the farmers' income increased 400 RMB Yuan annually.

## Bright Prospects

In the next decade, it is expected that the construction of the biogas plants will increase both in the rural areas and in the towns. The increases in town population will be advantageous to the large and medium-sized biogas plants. Around the towns, the amount of municipal sewage to treat will increase as well as the number of intensive pig- or poultry farms and, accordingly, the construction of biogas projects. The living standard in the rural areas is increasingly benefiting from the utilisation of the energy and residues from the biogas plants. The biogas technology brings about remarkable benefits in energy, environment, ecology, and economy, so it attracts the attention of the government and gains support from the whole society. Therefore, we believe that this technology has a bright future in China.

*CBS experts - designed biogas project on 10,000 - pig farm in Shenzen*

## Governmental Plans, Biogas Society Calls for Cooperation

In 1996, China formulated its "9th Five-Year Plan" and a long-range program for the year 2010. It was decided that the research institutions will remain engaged and that the government will continue its financial support. In 1996, The Ministry of Agriculture, of the People´s Republic of China issued a notice to promote the development of energy-environment projects. The Department of Environment Protection and Energy of the Ministry of Agriculture and the China Biogas Society (CBS) are now engaged in the organization and promotion of the work.

About 20 breweries, food processing factories, and/or animal farms are being chosen as model projects, adopting new anaerobic fermentation processes pretreating the materials for fermentation, and pretreating the anaerobically digested residue in order to achieve overall benefits.

Related research areas include high-efficiency anaerobic digestion processes: Upflow Anaerobic Sludge Blanket Reactor, Anaerobic Fluidized Bed Reactor, Upflow Anaerobic Sludge Bed Filter Reactor, Upflow Solid Reactor, and the Anaerobic Attached Film Expanded Bed.

The CBS welcomes cooperation from all over the world.

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*Ph:+86-285-551571,*
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*Rural household biogas digesters and fish ponds fed with digested slurry.*

*See the previous article in Sustainable Energy News No.2 and No.5.*

The China Biogas Society (CBS) is an academic association engaged in research, development. It has 1600 individual members and 53 group members. The CBS publishes a magazine, "China Biogas", as well as other publications including video films and slides. The CBS provides consultation; it also organizes international conferences and training courses.

- Population of China: 1.2 billion.
- Number of counties: 2,200.
- Most of the 200,000 new biogas digesters built each year are rural hydraulic biogas digesters with concrete structures cast in-situ.
- Financial supporting system for the 100 demonstration counties:
30% central government.
30% province-based government.
40% local government from the prefectures and counties.
- Digester-building nowadays is mainly financed and carried out by farmers themselves.

One Chinese household hydraulic biogas digester costs about 800-1,000 RMB Yuan (about 100-125 USD) according to different prices of materials and labour in different economic development areas. This cost is not so high that a farmer could not afford it. Only very poor farmers in remote mountain areas can apply for loans or poverty-relief fund support from the government.

# Southern African Renewable Energy Information Network SAREIN

SAREIN is a joint initiative of Southern Africa and the European Union that is currently operational in six countries (Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, and Zimbabwe). The Network's top priorities include identifying opportunities, removing barriers to joint EU/Southern-African projects in renewable energy RE. This would be achieved through:

♦ Gathering and promoting information about technology, markets, financing, and opportunities;

♦ Establishing high-profile links between relevant stakeholders in industry and the public sector; and

♦ Raising awareness of the potential of RE services, e.g. with national newsletters and national RE information networks.

♦ In each country in which the network is operational, a focal point of the network has been chosen. The network is supported by the EU-Thermie funds for 1998-99.

*Source: Coordinator, Dean Cooper, e-mail: dean.cooper@aeat.co.uk or dcooper@mega.bw, European Coordinator: Andrew Lamb ETSU, B154 Harwell, Didcot Oxfordshire OX11 0RA UK. e-mail: Andrew.Lamb@aeat.co.uk ph: +44 1235 433294, fax: +441235 432331, http://www.etsu.com/sarein/.*

# Namibia Solar Home Power

The pilot phase of the Solar Home System (SHS) Project was launched in April, 1996, by the Ministry of Mines and Energy in Namibia. The main objective of the project is to disseminate SHSs, particularly to people living in the rural areas without access to grid-electricity. The SHSs are being installed by solar technicians who were trained locally by the project. To date, about 100 technicians from all over Namibia have received training.

In the current phase (II) of the SHS project, which started in October 1997, problems experienced during the pilot phase led to the several changes including:

Three alternative types of SHS were offered rather than just one:

♦ a small solar lamp/transistor-radio combination;

♦ a 50-Wp system with energy for four 9-W fluorescent lights and a 12-V radio/black-and-white TV.

♦ a 100-Wp system with energy for eight 9-W fluorescent lights and a 12-V radio/colour TV.

A database is being created to hold information on projects and systems in Namibia, including the SHS Project.

*Source: REINNAM, Renewable Energy Information Network in Namibia, coordinator: Ms. Renate Hans, e-mail: bsiepker@iafrica.com.na, ph: +264 612 848111, fax: +264 612 38643, Ministry of Mines and Energy, P/Bag 13297, Windhoek, Namibia. See also http://www.etsu.com/sarein/.*

# National Rural PV Program,Botswana

The National PV Rural Electrification Program (NPVREP) is aimed at providing electricity to rural households on affordable financial terms.

The program is financed by the government of Botswana and will be managed by the Rural Industries Innovation Centre (RIIC) for the period from 1997 to 2001.

The objectives of the program are:

♦ To disburse loans at the prime interest rate to rural households for purposes of installing PV systems.

♦ To raise the standing of PV lighting systems as a renewable energy source, enhance the reputation of the local PV companies, and to assist rural people in finding financing for these systems.

The scheme requires individuals in a village who wish to install a PV system to form a group and submit an application. By applying as a group, they reduce their installation costs. The group must then pay a 15% deposit.

The RIIC employs a contractor to do all the installations. Once the system is installed, each member of the group is responsible for the monthly payment of his/her account.

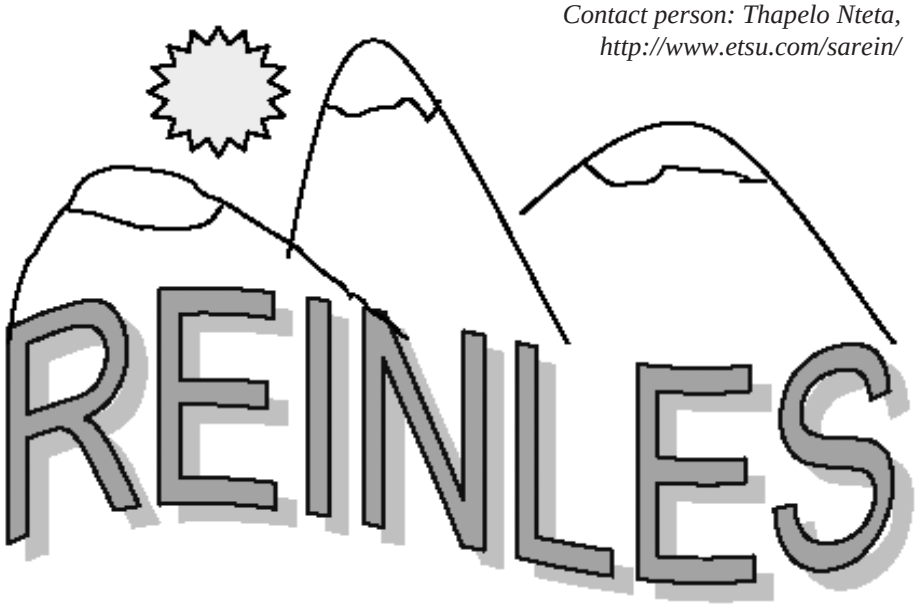
In 1997, the starting year of the project, over 100 systems were installed.

*Source: REIN Drops, Jan. 98, newsletter of REINBO, Renewable Energy Information Network Botswana, P/Bag 0082, Gaborone, Botswana. Ph: +267 314161, fax: +267 374677, e-mail: reinbo@info.bw, Contact person: Thapelo Nteta, http://www.etsu.com/sarein/*

# Theft of Photovoltaic (PV) Panels

In Swaziland, pilfering of PV modules is a serious problem. REINSWA (Renewable Energy Network in Swaziland) would like to invite suggestions not only from victims of this type of theft but also from other interested persons and organisations. REINSWA also seeks to learn more about other aspects of the problem, such as the location(s) of the market for the stolen modules.

*Source: REINSWA, att. John Malone ph: +268 46244/8, fax: +268 47252/42436, E-mail: nergyswa@realnet.co.sz, http://www.etsu.com/sarein/.*



# Increasing Protests over K2R4

*Compiled by Gunnar Boye Olesen, INFORSE - Europe*

**More than 130 concerned NGOs have joined the Environmental Impact Assessment of the K2R4 project, which aims at completing two reactors in Ukraine with EBRD loans. Other countries and nuclear workers have also raised concerns about the project.**

*120 kW windturbines at Donuzlav, Crimea, Ukraine*

The ongoing consultation of the public by the Environmental Impact Assessment (EIA) about the K2R4 completion project (Khmelnitsky 2 and Rivne 4 reactors) is a focus for many NGOs concerned with the project. The gathering of public input, requested by the European Bank for Reconstruction and Development (EBRD), runs until December 15, but might be extended. It officially includes three public meetings in Ukraine and written position statements from NGOs. For groups outside Ukraine, the greatest voice in the process probably will be achieved through the events initiated by NGOs, as well as via the written statements.

The official meetings with the public took place in Neteshin 27 Oct., Rivne 28 Oct., and Kiev 30 Oct. In Neteshin, which is very close to the Khmelnitsky nuclear power plant, workers of the nuclear power plant participated in the meeting. About 200 persons attended the meeting. All of the input received from the attendee opposed the project. The question of salaries was also raised: NPP worker salaries in Netishin have been delayed for one to five months, and morale among the workers is poor.

A number of those who raised concerns had worked as liquidators* at the site of the Chernobyl accident. They raised concerns about radiation, compensation issues, and risk insurance. Along with NGOs, the government of Austria has officially entered the EIA process because of its concern for transboundary effects of the K2R4. According to a letter of the Czech Minister of Environment, Austria's officials also decided officially requesting EIA documentation on the K2R4 from Ukraine and following the process to submit its official input.

*The workers that closed the exploded reactor with the sarcophagos are called Chernobyl liquidators.

## 56 Reasons Not to Complete the K2R4

The CEE Bankwatch Network has collected 56 of the most compelling arguments against completion of the K2R4, with explanations and extensive references. Among the arguments are:

- The new reactors are not needed, because Ukraine has a large overcapacity from other sources.
- The new reactors will not be able to meet acceptable safety standards with the proposed completion projects.
- Completion of the K2R4 is not the most cost-effective investment in the Ukrainian energy sector.
- Investing in the K2R4 will "crowd out" projects for more sustainable uses of energy.
- A large majority of the local population opposes the projects.

*More information: CEE BankWatch network c/o EEP*
*Kratka 26, Praha 10, 1000 00.*
*Ph/fax: +420-2-7816571.*
*http://www.geo.ut.ee/bankwatch*
*http://www.ecn.cz/reasons.zip*
*http://www.ecn.cz/K2R4*
*List by e-mail:Petr.hlobil@ecn.cz.*

## Ukraine Finds the EBRD Requirements Too Strong

Ukraine President Leonid Kuchma said in the last week of September that the EBRD is proposing unacceptable conditions on a loan for the K2/R4 completion project. He had just discussed a completion project with Russia, including loans from Russia and lower safety standards than those proposed for completion with EBRD and EURATOM funding. The European pro-nuclear lobby FORATOM and EU-Commission representatives are concerned about this possibility, arguing that, with such a completion project, Chernobyl might not be closed, as this is one of the conditions of the EBRD loan to finish the K2R4.

Environmental NGOs involved in the issue are opposing the K2R4 completion. They generally agreed that a completion with EBRD funding will divert EBRD funding from more sustainable purposes and could set a precedent for multilateral development banks funding nuclear reactors. Further, many observers doubt the ability of Russia to fund the completion.

## Greenpeace Documentary

Greenpeace International is producing a video on nuclear power and environmental activists in Ukraine, mainly for use in the K2R4 campaigns.

*More information: Greenpeace International, Todd Southgate,Keizersgracht 176, 1016 DW Amsterdam, Netherlands.*
*Ph: +31-20-523-6275,*
*fax: +31-20-523-6200,*
*e-mail:Todd.Southgate@ams.greenpeace.org*
*http://www.greenpeace.org.*

## Action Day Against K2R4, December 14

A SEED Europe is coordinating an action day against K2R4 completion and corresponding EBRD involvement. Action Day is planned on December 14. The idea is:

- to organise a public protest in front of as many EBRD offices as possible (29 offices in 26 countries).
- to organise a public protest in front of all the relevant (Finance) ministries of Western countries that are important shareholders in the EBRD.
- to organise a massive fax/mail action to the EBRD and to its members.
- to add other local activities when possible.

*More information: A SEED Europe, att. Johan Frijns, PO Box 92066, 1090 AB, Amsterdam, the Netherlands,*
*Ph:+31-20-6682236, fax:+31-20-6650166,*
*e-mail:jfrijns@antenna.nl,*
*http: //www.antenna.nl/aseed/ebrd.*

# Continuing Capacity Building Program for Activists Working on Energy

### Handbook Available

The Free and Applied Internships on Renewables and Efficiency (FAIRE) was organized by the Energy Club of Hungary. It combined English teaching with energy- and NGO-management issues to improve participants' capacity to take part in international cooperation among activists.

From 1997 to 1998, 20 people from Central and Eastern Europe (CEE) and from the Commonwealth of Independent States (CIS) took part in the program in Budapest. Today, the network includes more than 50 people from CEE, CIS, and from Western European organizations.

The Energy Club is not going to organize this program on an international scale anymore. The Club has developed a handbook (hard copy, later on the web) and will travel to help the new coordinators set up the program (depending on funds). The Club is looking for local NGOs interested in continuing the program, and will send it to them for free. If your organization is working on renewable energy, energy efficiency, and other alternatives to nuclear power, you could be the next organizer of FAIRE. If you decide to organize FAIRE, you will have to manage all aspects of it, from fundraising to implementation to reporting.

**Deadline: January 15, 1999.**

*More information: Nathalie Francoeur Energy Club, PO Box 411, 1519 Budapest, Hungary. Tel/fax:+36-1-4668866, http://www.c3.hu/~energia/, e-mail: mustafa@freemail.c3.hu.*

## EU Campaign for Renewables

The EU Energy Ministers have approved a "take-off campaign" for renewable energy that is under preparation by the EU Commission. The goals include:

- 10,000 MW of wind turbine capacity in EU countries (currently capacity is 5,000-6,000 MW).
- 10,000 MW of biomass-fuelled cogeneration of heat and power in the EU.
- 500,000 roofs with PV cells on institutions in the EU countries.
- 500,000 PV projects in rural areas in developing countries.
- 100 local areas/islands supplied by 100% renewable energy.

The goals are expected to be reached by 2010, and the campaign is scheduled to start in 1999. The initiative is a follow-up of the EU White Paper on Renewable Energy, December '97.

*More information: http://europa.eu.int/eur-lex/en/lif/dat/en_398D0352.html*

## EU Access Directive for Renewables

The EU Commission is preparing a proposal for a directive on access (feed-in) for renewable energy to the electric grids. The proposal is due before Christmas and will afterwards be discussed by the EU Parliament before eventual approval by the EU Energy Ministers. This directive can give important guidelines on how to include renewable energy in the new electricity market that formally starts in February, the deadline for the implementation in national legislation of the EU Electricity Market Directive. From INFORSE-Europe, we plan to follow closely the discussions on this directive.

# 2-Week Summer University 12-23 July, 1999

**Energy Policy for Economies in Transition: (De)Regulation for Development and the Environment.**

Framework and debate on energy sector restructuring options for central and eastern European (CEE) economies, focusing on the future of nuclear power and its alternatives in the region, with a special emphasis on improving energy efficiency.

We invite applications from interested academics, policy-makers, NGO representatives, think-tanks, and related private sector representatives, who take part or interest in shaping energy policy in CEE.

**Deadline: January 15, 1999**

The course is free of charge for professionals from CEE and from the former Soviet Union. They receive a grant to cover their costs such as travel, accommodation, and meals. Western participants have to pay a tuition cost of $200 per week. Limited number of tuition waivers are available for western participants.

*More information: Diana Ürge-Vorsatz, Central European University (CEU), Hungary, and William Golove, Lawrence Berkeley National Laboratory, USA. c/o SUN CEU, Nádor u. 9, Budapest, Hungary 1051, Tel: +36 1327 3069, 327 3811, fax: +36 1327 3124, e-mail: summeru@ceu.hu, http://www.ceu.hu.*

SUN

**Central European University**

**Summer University Hungary 1999**

# Regional News Latin America

*By Emilio L. La Rovere, Brazil, LIMA, INFORSE Latin America Coordinator*

## EFFICIENTIA '98 October Largest Energy Efficiency Event of the Year

Around 1,500 participants, 70 equipment exhibits, and 350 lecturers will be at the International Seminar on Electrical Energy Conservation, EFFICIENTIA '98, organized by Eletrobrás/PROCEL (the Energy Conservation Program of the Brazilian Federal Utility) at Riocentro, the huge Conference Centre of the city of Rio de Janeiro, from 18 to 22 October.

New regulations of the Brazilian power sector now require the utilities to invest in energy conservation at least 1 % of total sales, of which a minimum of 0,25 % must be spent on end-use efficiency improvement. This opens a market for energy-efficiency projects of around $150 Million in 1999. Engineering firms, equipment manufacturers, utilities, and large power consumers are already preparing their strategies to launch important initiatives. Ten parallel sessions will focus on the following issues at the Seminar:

- Industrial sector
- Commercial sector
- Small and medium enterprises, water and waste water sector
- Residential sector
- Public sector: municipal energy management, public buildings and lighting
- Education
- Regulations
- Marketing
- Demand-side management
- Losses in the power sector.


## 4th Meeting for Development of Renewable Energy in Brazil

More than one hundred participants from government agencies, universities, NGOs, research centres, equipment manufacturers, and utilities involved with renewable energy development met in Recife from 6 to 9 October, 1998, for the 4th Meeting for Development of Renewable Energy in Brazil. These Brazilian meetings with key invited experts from abroad are being promoted by the Permanent Forum of Renewable Energy (Solar, Wind, Biomass, and Mini-Hydropower), which includes both governmental and non-governmental organizations. Its main support and sponsorship comes from Brazilian Ministries (Mines and Energy, Science and Technology, Foreign Affairs), governmental agencies, utilities, the Reference Centre on Solar and Wind Energy (CRESESB) hosted by the Electric Power Research Centre (CEPEL), the Reference Centre on Biomass Energy, industry (manufacturers of renewable-energy equipment), and the universities from Rio de Janeiro (COPPE/UFRJ) and São Paulo (USP, UNICAMP).

While the ethanol program was limited to the blending of 24 % of ethanol in the gasoline (new ethanol-driven cars are no longer being manufactured), renewables are gaining momentum again in research, development, and demonstration. Rural electrification projects based on photovoltaics play a leading role. Growing interest is also shown in wind energy, particularly in the northeastern region, where the potential for installing aerogenerators is larger.

The recent privatization of some utilities and new regulations of the power market in Brazil also contribute to increased opportunities for independent power production, mainly from small hydropower and cogeneration projects.

This meeting also marked the comeback of fuel cells and hydrogen systems to the main stage of Brazilian research and development activities.

*More information: Emilio Lebre La Rovere, Laboratorio Interdisciplinar de Meio Ambiente, LIMA, VP 68565 Rio de Janeiro, CEP 21945-970, Brazil.*
*Ph/fax: +55-21-560 8995 or 290 6626,*
*e-mail: emilio@ppe.ufrj.br.*

# Sustainable Energy Contact List Corrections / New

**In the next issue we will publish the European part of the Worldwide Contact list. The contact list includes about 700 NGOs, institutions working with renewable energy, energy efficiency, and sustainable energy development.**

**Please send corrections:**
**Fax: +45-86227096,**
**E-mail: ove@inforse.dk**

**The following INFORSE members has changed their address or phone or fax since Sept.98:**

**Renewable Energy Association of the Philippines REAP**
Associate member of INFORSE.
11 Liamzon St., Midtown, Marikina City, Phillipines.
Att. Vic O. Roaring,
Ph: +63-2-6458167, Fax: +63-2-6467319
e-mail:renergy@compass.com.ph

**Centre for Renewable Energy CRE**
Associate member of INFORSE.
P.O.Box 589, Bag Bazar, Kathmandu, Nepal.
Att. Rajendra Bahadur Adhikari,
Ph: +977-1-248852/351052
Fax: +977-1-226976
e-mail:cre@vishnu.ccsl.com.np

**Thapathali Engineering Campus**
**Associate** member of INFORSE.
P.O. Box 280, Kathmandu, Nepal.
Att. Riddhi Ratna Sthapit,
Pradip Kaji Tamrakar
Ph: +977-1-246465
Fax: +977-1-246307
e-mail:tcampus@mos.com.np

**Integrated Rural Development Initiatives IRDI**
Associate member of INFORSE.
PO Box 10596, Kampala, Uganda.
Att. S.M. Mukasa,
Ph: +256-41-266492
Fax: +256-41-533574
e-mail:irdi@uol.co.ug
http:uuu.nic.ug/irdi

# Publications

## The World Directory of Renewable Energy Suppliers and Services 1998

The largest and most comprehensive guide available to the renewable energy industry. Alphabetical and classified listing of nearly 5000 companies worldwide with a description of their activities. Wide range of articles.
Edited by Bruce Cross, Energy Equipment Testing Services Ltd. Cardiff Wales.
488 pages, $120 1998.
Also available on the WEB:
http://www.jxj.com/dir/wdress/index.html

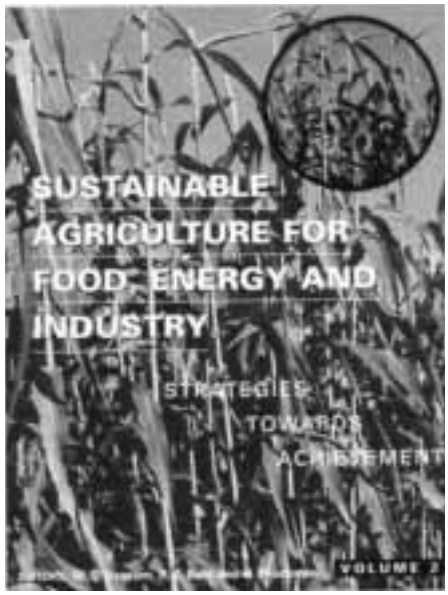
## Energy Plant Species

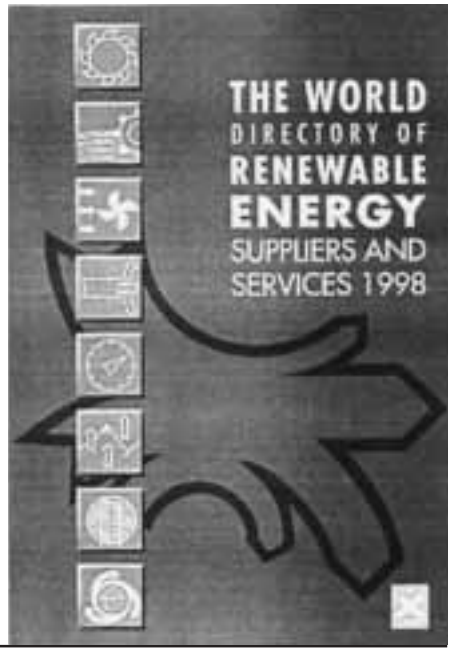
**Their use and Impact on Environment and Development**
Which crops make up 15 % of the world primary energy consumption? What can be done to boost the levels of production to meet the increasing demand? For each energy crop species, it gives a brief description and outlines the ecological requirements, crop management, rotation, production, harvesting, handling, storage, processing, utilization etc. It gives a social and economic analysis. Overviews the energy crops' impact on environment, and climate. Edited by N. El Bassam, Federal Agriculture Research Center Braunschweig Germany. 334 pages, $75, 1998.

## Sustainable Agriculture for Food, Energy and Industry

**Strategies Towards Achievement**
Resources to provide food for the present rising world population and, at the same time, to meet the demand of running it sustainable, so the future generations will be able to meet their needs also.
Proceedings of the International Conference held in Braunschweig, Germany. 230 publication were selected from 400 papers and posters of the conference which was organised by FAL (Federal Agriculture Research Center, Germany), FAO and the Society of Sustainable Agriculture and Resource Management, Hisar, India.
Edited by N. El Bassam, FAL (see above) et.al.
Two volume set, 1200 pages, $280 1998.

*Contact:*
*James & James (Science Publishers) Ltd, 35-37 William Rd. London NW1 3ER, UK.*
*Ph: +44-171-387-8558,*
*fax: +44-171-387-8998,*
*e-mail: orders@jxj.com,*
*http://www.jxj.com.*




### Renewable Energy and Efficiency Fingerbook

This is the follow up of the 1st Fingerbook.
10 Country Pages from Central Eastern Europe. A Country Page includes short overview: Electricity consumption, generation by sources and demand by sectors. Renewable Energy's Success Stories, Legislation/policies and Potentials.
70 tiny pages, free to copy

*Contact:*
*- Za Zemiata (For the Earth) PO box 975, Sofia, Bulgaria.*
*Ph/fax: 359-2-658-216.*
*- Energy Club, PO Box 411, Budapest, Hungary.*
*Ph/fax: +36-11668866*
*e-mail: ada@.zpok.hu.*

### Climate in Crisis

30-page brochure for South East Asia Energy Campaign by Greenpeace.

Questions, Answers and illustrations. Easily understandable description of the science, impacts, eco-limits, alternatives, actions of governments and where the individual can help.

*Contact: Fiona Koza, Athena Ronquillo Ballesteros, Southeast Asia Climate and Energy Campaign, Greenpeace.*
*49 Matatag str., Bgy. Pinyahan 1101, Quezon City, Philippines.*
*Ph: +632-434-7034,*
*fax: +632-434-7035, e-mail: athenar@dialb.greenpeace.org,*
*http://www.greanpeace.org.*

### Special Issue No. 500 WISE News Communique

What is WISE about? Information, research, open doors, library, actions. 20 years of WISE. Short histories of Nuclear power and anti-nuclear movements. Renewable as an alternative section.
Beginning of a trend in 1998, for the first time in the 40-year history of the nuclear power the installed nuclear capacity decreased. 20 pages.

*Contact: WISE, PO Box 59636, 1040 LC Amsterdam, The Netherlands.*
*Ph: +31-20-6126368,*
*fax: +31-20-6892179,*
*e-mail: wiseamster@antenna.nl,*
*http://antenna.nl/~wise.*

## Periodical

### Energy and Environment

Quarterly newsletter in Thai and English. 8 pages. Second issue in September, 1998. Topics: Sustainable Energy Awareness Seminar, Biogas, Solar Cell. Published in cooperation with the Alternative Technology Association Thailand.

*Contact: Thai Danish Cooperation on Sustainable Energy, 2252 Mittraphap Rd. Muang District Nakorn Ratchasima 30000, Thailand.*
*Ph: +66 44-282-354-5,*
*fax: +66 44-213-700,*
*e-mail: se@ata.or.th,*
*http:// www.ata.or.th.*

# Events

**Event with INFORSE participation**

*November 16-18*
**Financing Renewable Energies, Bonn, Germany**
2nd Int'l Conference organised by EUROSOLAR.
Info: The European Association for Solar Energy (EUROSOLAR), Plittersdorferstrasse 103, 53173 Bonn, Germany.
Ph: +49-228-362373, fax: +49-228-361279,
e-mail: inter_office@eurosolar.org,
http://www.eurosolar.org.

*November 30 - December 11, 1998*
**UNCCD, COP 2 Dakar, Senegal**
Convention to Combat Desertification
Info on NGO activities: ENDA - Energie,
54 rue Carnot, BP 3370, Dakar, Senegal,
Ph: +221-8-225983/-222496,
Fax: +221-8-217595/-235157,
e-mail: energy2@enda.sn
See articles on pages: 4-7.

*February 1-3, 1999*
**Energy Storage Technologies & Systems, Indore, India**
Info: D. Buddhi, School of Energy and Environment Studies, Devi Ahiya University,
Indore 452 001 India.
Ph: +91-731-460309,
fax: +91-731-470372.

*February 10-13, 1999*
**WREC '99, Perth, Australia**
World Renewable Energy Congress
Renewable Energy Technologies and Policies for Sustainable Development
Info: Concept Connections International, PO Box 235, Mt. Hawthorn WA 6016, Australia.
Ph: +61-8-92425542,
fax: +61-8-9242-2238,
e-mail: concept@concon.com.au.

*March 1-5, 1999*
**European Union Wind Energy Conference & Exhibition, Nice, France**
Organised by EWEA.
Info: WIP, Sylvensteinerstrasse 2,
81369, Munich, Germany.
Ph: +49-89-720-1232,
fax: +49-89-720-1291,
http://www.riseoe.dk/amv/euwec99.

*March 4-5, 1999*
**World Sustainable Energy Day, Wels Austria**
Renewable Energy & Energy Efficiency for the EU, English, German, French, Slovak/Czech simultaneous interpretation.
Info: P.Ö. Energiesparverband,
Landstrasse 45, 4020 Linz, Austria.
Ph: +43-732-6584, fax: +43-732-6584-4383,
e-mail:esv1@esv.or.at,
http://www.esv.or.at/esv/

*May 25-27, 1999*
**SUSTAIN '99, Amsterdam, Holland**
The World Sustainable Energy Trade Fair: Renewable Energy, Waste-to-Energy, Sustainable Transport
Info: European Marketing Ltd. PO Box 259, Bromley, BRI IZR, UK. Ph: +44-181-289-8989, fax: +44-181-289-8484, e-mail: sustain@emml.co.uk, http://www.emml.com.

*May 31- June 6, 1999*
**Business and Investment for Renewable Energy in Russia, Moscow, Russia**
Info: Intersolarcenter, 2, 1st, Veshniakovsky proezd, Moscow 109456, Russia.
Ph: +7-095-171-9670, fax: +7-095-171-9670,
e-mail: intersolar@glas.apc.org.

*June 8-11, 1999*
**WREC '99 Kuala Lumpur, Malaysia**
World Renewable Energy Congress
Info: Secretariat, 3rd Floor, 78 Jalan SS 22/21, Damansara Jaya, 47400 Petaling Jaya, Selangor, Malaysia.
Ph: +60-3-7172612/13, fax: +60-3-7172616
e-mail: transe@tm.net.my.

*June 15-18, 1999*
**ACEEE Summer Study, New York, USA**
Info: American Council for an Energy-Efficient Economy (ACEEE), 1001 Connecticut Avenue, NW Suite 801, Washington DC 20036, USA.
Ph: +1-202-429-8873, 1-202-4292248,
e-mail: conf@aceee.org, http://aceee.org.

*June 20-23, 1999*
**Windpower ´99 AWEA, Vermont, USA**
Info: American Wind Energy Association (AWEA), 122 C Street, NW, 4th Floor, Washington DC, 20001, USA. Ph: +1-202-383-2500,
fax: + 1-202-383-2505,
e-mail: laura_keelan@awea.org.

*June 21-24, 1999*
**International Conference on Wind Energy, Copenhagen, Denmark**
Info: Danish Maritime Institute, Hjortekarsvej 99, 2800 Lyngby, Denmark.
Ph: +45-45-879325, fax: +45-45-879333,
e-mail: icwe99@danmar.dk.

*July 4-9, 1999*
**ISES Solar World Conference, Jerusalem, Israel**
PO Box 50006, Tel Aviv 61500, Israel.
Ph: +972-3-514-0000,
fax: +972-3-514-0077,
e-mail:ises99@kenes.com.
http//tx.technion.ac.il/~meryzse/ises99.html

*July , 1999*
**SUN Summer Study Energy Policy**
Info: Central European University, Budapest
c/o SUN CEU, Nádor u. 9, Budapest, Hungary 1051,
Tel.: (36 1) 327 3069, 327 3811
fax.: (36 1) 327 3124,
e-mail: summeru@ceu.hu,
http://www.ceu.hu/.
See article on page no. 12.

*August 11-14, 1999*
**North Sun'99, Edmonton, Canada**
8th Int. Conf. Solar Energy in High Latitudes.
Info: The Solar Energy Society of Canada,
Ph: +1-613-234-4151.

*September 22-26, 1999*
**Husum Wind '99, Husum, Germany**
Info: Osterwungweg 2, 25813, Husum Germany.
Ph: +49-841-8355-0, fax: +49-4841-8355-55,
e-mail:peter@wellmann.allcon.com.

*September 25 - October 3, 1999*
**PLEA 1999, Brisbane Australia**
16th International Conference on Passive and Low Energy Architecture
Info: Sally Brown, The University of Queensland, Brisbane, 4072 Australia.
e-mail: sally.brown@mailbox.uq.edu.au.

*November 2-5, 1999*
**Environment China '99, Guangzhou, China**
Info: Stefanie Niebuhr, Gima Exhibitions & Conferences, Heidenkampsweg 51, 20097 Hamburg, Germany.
Ph:+49-40-235-24341,
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*January 24-28, 2000*
**WCEC 2000**
**World Clean Energy Conference**
The Protection of Health, Biosphere and Climate by Clean Energy
Info: World Sustainable Energy Coalition, Kellerweg 38, CH-8055, Zürich.
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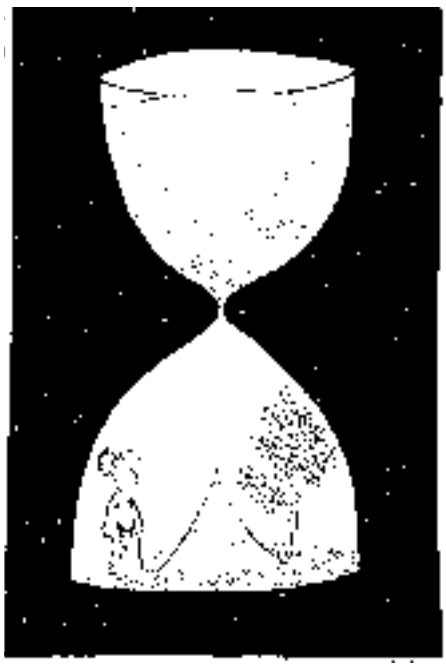
fax: +41-1-4630252.

**UNCCD, COP 2 Dakar, Senegal**
*Convention to Combat Desertification*
*See articles on pages: 4-7.*



# Contents



# Review of Renewable Energy in Small Islands

## Publication is Available

A review of renewable energy in small islands was finished in April, 1998. The main conclusions of the report are:

♦ Although most islands are now dependent on imported fossil fuels for the majority of their energy, especially for transport and electricity production, some small and medium islands receive a significant percentage of their energy from renewable sources. A few islands already have met some of the criteria for a Renewable Energy Island (REI). A REI is an island that will be prepared to change 100% to renewable energy, including the transport sector, over the next few years.

♦ The following islands use renewable energy extensively: La Desirade (Guadeloupe, France), Nan'ao Island (China), Pellworm (Germany), and Reunion (France).

♦ The following islands have ambitious renewable energy goals for the short and medium terms: Aeroe , Bornholm, Samsoe (Denmark); Nan'ao Island (China); Galapagos Islands (Ecuador); Marie Galante, Guadeloupe (France); Pellworm (Germany); Madeira (Portugal); and Gotland (Sweden).

The review was conducted on behalf of the Danish Council of Sustainable Energy by the Forum for Energy and Development (FED).The latter hosts the international secretariat of the International Network for Sustainable Energy (INFORSE).

*The full report is available in print from the Forum for Energy and Development (see address below) and on the Internet in Adobe PDF format (674 kb) at the web site of the Danish Council for Sustainable Energy: http://www.energimiljoeraadet.dk.*

## Information Is Welcome!!

Corrections about the information in the review and new information about renewable energy initiatives on islands is very welcome. Please write to the Island Project Coordinator at the Forum for Energy and Development, Mr. Thomas Lynge Jensen.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