

Sustainable Energy News

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Newsletter for the International Network for Sustainable Energy

- INforSE



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Gateway to Sustainable Energy Info

While the Internet has been around for decades, it is a recent development that considerable sustainable energy issues are represented and discussed on the "net". For more and more sustainable-energy activists and professionals, the information available is worth the hassle and costs of getting connected to the Internet, e.g., via one of its more activist-driven parts, such as the APC (Association for Progressive Communication) with Greenet/Peacenet, or Fidonet. The electronic library that the Internet makes available finally includes some shelves devoted to sustainable energy.

As explained in an article later in this issue, the new sustainable-energy database, Solstice, provides a good starting place in which to seek sustainable-energy information electronically. And it does not require access to the more advanced internet facilities such as the World Wide Web (WWW) nor do you need graphical communications software. By using the simplest access to electronic mail (email), you can get most of the available information.

In INforSE we celebrate this new development by making Sustainable Energy News and the Sustainable Energy Contact List available on Solstice. So, if you need an electronic copy of this editorial, or of any other article in this issue, you can just send a couple of emails with commands to Solstice, and the article will arrive to you (see article on p.13). You are welcome to use the texts

in your own work, as long as you state the source.

We also plan to create an INforSE homepage. The web-address will be published in the next issue of SEN.

While the Internet opens new doors, it also sets up new barriers between those who have the access and those who have not. Almost all INforSE member-organizations have the basic requirements for access: a telephone and a computer. Many, however, do not use email or other internet facilities because they lack the connection and/or the knowledge. All INforSE coordinators (except Central Asia) now have access to Internet, and a number of foundations have funds available for connecting organizations like INforSE members to the Internet. Thus, we hope that our electronic efforts will not be only for the lucky few.

So, try out the electronic Sustainable Energy News and send us your comments, good or bad, by mail or by email.

Rene Karottki & Gunnar Boye Olesen

INforSE Coordinators' Meeting on Email

The INforSE Coordinators' Meeting 1995 is postponed until December 11-15, 1995. It is changed from a normal meeting to an email meeting, exploring the new media while reducing time, energy and costs of travel. The results of the meeting will be available at the Solstice Internet site and at the APC conference "energy.network".

Front page:

Ms. Lalita Balakrishnan (right), and Ms. Rajaran (left) presenting a workshop at the NGO Forum parallel to the UN World Conference on Women. See article on page 4.

Sustainable Energy Contact List - Europe

For the next issue of Sustainable Energy News we will update the Contact List - Europe. Please send corrections before 15.02.1996.

World Solar Summit, September '96, Harare

The World Solar Summit (WSS) is now scheduled to be held during the last part of September, 1996 in Harare, Zimbabwe (not in March as stated previously). It is a two-day meeting for heads of states. Immediately before it, there will be a meeting of the World Solar Commission, which is the main body for directing, evaluating, and presenting the five leading WSS documents for approval at the Summit.

Of the many regional preparatory meetings of high-level experts, three are still forthcoming: the "Asian Solar Summit", Kuala Lumpur, Malaysia, January 22-26, 1996; the

"Mediterranean Solar Summit", Valletta, Malta, March 22-26, 1996; and the "Moscow Solar Summit", July 8-12, 1996.

From the INforSE secretariat, we hope to have a large participation of INforSE organizations at the Solar Summit, and maybe an INforSE exhibition. The next INforSE coordinators' meeting could also take place in Harare at the time of the Solar Summit. Similarly, if there is interest, INforSE organizations could be present and make inputs to the preparatory meetings in Kuala Lumpur, Malta, and Moscow.



For cooperation on INforSE inputs, please contact INforSE.

For information on the Solar Summit, the World Solar Programme 1996-2005, and the preparatory meetings, please contact: World Solar Summit Secretariat: UNESCO Engineering and Technology Division, att. Boris Berkovski & Richard Wyhn, 1 rue Miollis, 75732 Paris Cedex 15, France. Fax: +33-1-4065-9535, ph: +33-1-4568-3900.

ISES World Congress '95 & World Solar Summit '96

By Djimingue Nanasta and Masse Lo, ENDA Energy Programme, Senegal, INforSE-Western Africa Coordinator.

ISES World Congress '95

On September 11-15, 1995 in Harare, Zimbabwe, the International Solar Energy Society, ISES, held its 1995 biennial World Congress, the first ever in Africa. The Congress is co-sponsored by UNESCO. Several meetings of the World Solar Summit Process, a UNESCO initiative, were included.

More than 550 delegates from about 55 countries gathered for the Congress to discuss how to use the growing technologies that rely on solar and other renewable energies. More than 600 technical papers were presented. Concurrently with the Congress was a solar technology exhibition, particularly for the provision of energy for lighting and water pumping.

Solar Summit Workshops

Also on the agenda were several workshops of the World Solar Summit Process, WSSP. Only about 50 delegates participated in the discussions, which were focused on the five leading documents that are being prepared for submission to the World Solar Summit in September, 1996 for approval. These include:

- The World Plan of Action;
- The World Solar Charter;
- The International Solar Treaty;
- The Strategic Projects;
- and the World Solar Fund.

The focus of our mission was the WSSP sessions. We highlighted ENDA's experience in the dissemination of renewable energy technologies as well as the role that INforSE, as a global network, can play in this boost for renewables. We deplored the fact that NGOs have not been involved in the WSSP so far and that many countries (almost the whole of French-speaking Africa) were not represented.

Our feeling is that the WSSP is using a top-down approach, leaving aside all actors involved in the dissemination of renewable energy technologies. It came out very clearly that there was a lack of communication at this point.

An information system should be established and the WSSP should raise funds to assist attendance by developing countries. Further, a consultation mechanism should be set up in order to involve all actors and partners in the process. Owing to the importance of the pending Solar Programme, the World Solar Commission should get in touch with the secretariats of other related processes, in particular the interim secretariat of the Convention on Desertification, to exchange experience.

INforSE Activities Needed

ENDA, in cooperation with INforSE, should undertake a wide information campaign in order to raise awareness and to mobilize all African actors, including officials as well as governmental, non-governmental, and grassroots organisations to contribute actively to the process and to save Africa from serving as a mere technology market. A seminar could be organized for this purpose.

Another controversial issue was the role of ISES. It has been decided that ISES, as a technical body, will fulfil the function of technical evaluation of projects. Participants were very critical of this decision and expressed their doubts about ISES' transparency. The basic socio-economic needs of the grassroots should be the main focus. To make sure that these needs will be taken into account through a bottom-up approach, ENDA and INforSE should take advantage of the establishment of the African Regional Solar Council (November, 1995, in Dakar) to work out a viable regional project that can be extended to other regions.



INforSE on NGO Forum & UN Conference on Women '95, Beijing

By Lalita Balakrishnan, All India Women's Conference, AIWC, India, representing INforSE on the events.

The NGO Forum and the 4th UN World Conference on Women (FWCW) held in Beijing, China, September, 1995 provided a unique opportunity to INforSE for participation.

Attendance by women from all over the world has been estimated to have been between 20,000 and 40,000. The UN Office of Protocol registered 16,921 representatives, predominantly women, including 4995 delegates from 181 States of UN, 3250 media personnel; 4035 NGO representatives, 446 UN Staff, and 363 VIPs.

NGO Forum Venue

The Huairou site for NGO Forum, comprising 42 Hectares, was a scenic resort which was situated about 55 km from Beijing, with satellite sites. The enormous distances and the last-minute changes of venue and of workshop schedules resulted in a lot of inconvenience and difficulty for the organisers as well as for participants. In spite of the difficulties and the heavy rains in the beginning, the stalls were set up with the organised efforts and teamwork of AIWC members. At the end, all of us appreciated the very good arrangement made by the China Organising Committee as well as the pleasant and willing services provided by the large number of volunteers (college boys and girls) who have been specially trained for one year. During the event, many interested and committed attendees participated in the activities. Various TV teams visited the booths and the exhibition as well.

AIWC/ INforSE Activities on the Forum

The AIWC/INforSE activities included organising a number of sustainable energy workshops, exhibitions, demonstrations, seminars, panel discussions, etc. as a part of the Science & Technology activities along with the members of OFAN (Once & Future Action Network) as well as with the Ministry of Non-Conventional Energy Sources, Government of India, and National level NGOs from 44 countries. More importantly, AIWC had collaborated with COSENI, AFPROTECH-ASIA, and APCTT to disseminate the INforSE - Action Plan 2000.

"INforSE - Sustainable Energy for a Better Life" This message had been printed on handkerchieves earlier at the AIWC textile printing unit in Delhi. These were distributed to the participants and VIPs.

The message of INforSE was promoted and disseminated at the pavilion and on various workshops effectively creating the widest possible awareness among those present.

Workshops

Among the workshops organised by AIWC/INforSE was the important "Women & Rural Energy - Income Generation Through NRSE (New & Renewable Sources of Energy)." There were 42 women from 22 countries who participated in this workshop and showed keen interest in follow-up.

Other programs organised by AIWC also evoked a lot of interest like: "Solar Chicken Brooder"; "Portable Wood Stove"; seminar on "World

Perspectives for Sustainable Development"; panel discussion of "Integrating Women's Concerns into Third World Science & Technology Development" with the collaboration of other national-level organisations.

The proceedings and the comments in the visitor's book bear ample testimony to the success of the programs. A follow-up effort is to be begun by AIWC on behalf of INforSE. A 3 year project is being prepared.

Very interesting and thought-provoking presentations were given by the representatives of Solar Energy International, Bahai's International, Solar Cooker International, the Indian Ministry of Non-Conventional Energy Sources, Avinasingam University, Coimbatore, Household Energy Programme, GTZ, Germany.

Official UN Conference

The UN Conference had an impressive opening ceremony at the Great Hall. From AIWC members, Ms.S. Varadappan, Ms. K. Yechuri, Ms K. Paul, and Dr. M. Bawa also attended the UN Conference Sessions. Dr Bawa worked closely with the caucus on environment and made a statement emphasizing the need for further innovation in environment protection through alternative energy sources to the working group.

Thanks

Grateful thanks to all those who helped us in making these efforts fruitful, wherein the thousands of women whose participation with dedication, in spite of difficulties, realised the importance of working closely together with effective networking toward global harmony and peace.

But a lot more is yet to be done to bring into the mainstream the sustainable energy without which no significant progress could be achieved by women from any country.

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Workshop on "Women & Rural Energy"

Full Steam Ahead: Geothermal Energy in the Philippines

By Benjamin Gertes, PCATT, Philippines, INforSE-Asia Pacific Coordinator

Choosing one's energy future could be hazardous to health, environment, and the economy of a nation.

The Philippines are lucky. They have lots of options. They can go solar, since Filipinos live in the torrid zone. And you and I know the equator gets plenty of sunshine. They can go with natural gas, because liquefied natural gas (LNG) has been found in great commercial quantities in Palawan. The Philippines have gone "natural" since 1979 through the efforts of Dr. Arturo P. Alcaraz. Recalling one of his scientific theories, "Geothermal operations may trigger small seismic events, but these help relieve the pressure on the earth in small doses and prevent the build up of tension. Better several small earthquakes than a big bang!"

The Philippines aren't only blessed with abundant sunshine. They are also bursting with power from within, as geothermal energy is the natural heat of the earth. The heat is created by fluids trapped in rock formations thousands of feet beneath the earth's surface. The energy comes in the form of steam that turns turbines, which in turns generate electricity.

It is safer, more reliable, and cheaper compared to the cost of power revved up by natural gas, coal combined cycle, hydroelectric, diesel, and gas turbine. The Department of Energy (DOE) Geothermal Division advises us that, as of last year, the total

installed capacity of geothermal plants is 1,053 megawatts (MW).

Five geothermal fields are being tapped for the purpose. These are Tiwi, Albay (330 MW); Mak-Ban, Laguna (345 MW); Tongonan, Leyte (112 MW); Palipinon, Negros Oriental (135 MW); and Bac-man, Albay-Sorsogon (130 MW). Worldwide, the Philippines rank second to the United States. The U.S. has an installed capacity of 2,594 MW. Mexico is third, with only 752 MW.

If the Philippines' quest to be newly industrialized by the turn of the century is to be kept alive and kicking, a reliable and sufficient power-generating infrastructure should be put in place.

The country has about 200 active and dormant volcanic centers, which can be tapped for geothermal power. As a potential top geothermal energy-producer in the world, it has more than enough natural resources just waiting to be harnessed for steam that can literally put the Philippines and its people on "full steam ahead!"

Despite the ups and downs of geothermal energy production in the country, President Ramos feels optimistic "that the Philippines may soon become the show-window of the world not only for power generation but for social and environmental responsibility as well".

Some people complain of hydrogen sulfide (H₂S) - a colorless, flammable, and poisonous gas that smells like rotten eggs. The Philippine Geothermal Inc. officials are exerting ef-



Geothermal power plant.

orts to upgrade their steam purification processes and are modernizing their tools as well as equipment to bring down to the barest minimum, if not to eliminate entirely, H₂S emissions by segregating the noxious gas from the steam before it is released into the air.

From an original article written by Thor S. Orig, Philippines

News/Information from INforSE

The News/information Gathering Services of INforSE Asia-Pacific regional office is now operational. This initiative will enable INforSE partners to have better access to news and information on sustainable energy development and other related subjects in the region. Initially there are 8 INforSE members/partners from the region (Malaysia, Thailand, Vietnam, China, Indonesia, Korea, Japan, the Philippines) that participates in a closer correspondence.

Model of Cooperation, Bhutan - Holland

The government of the Netherlands has pledged to churn out the funds for the production of solar energy in Bhutan. The deal is a part of the bilateral sustainable development agreement signed between the two countries in March, 1994, which envisages cooperation in biodiversity, energy, culture, and human resources. So far, US\$3.50 million have been made available annually for different projects. The purpose of the agreement is to create a new style of development cooperation, which can be used as a model by the international community. (DTE).

New Geothermal Developments at the Philippines

- The Mt. Apo geothermal project is in its initial phase for 120 megawatts and it will continue.
- The Leyte-Cebu interconnection geothermal project will continue with connection from the island of Leyte to Cebu. Its funding was just recently assured by a US\$211 million concessional loan from the World Bank.
- The Tongonan geothermal field will be connected by heat transmission lines to the users of Cebu.
- The development of the Mindanao geothermal field will continue.
- The Southern Leyte-to-Northern Mindanao-through Surigao del Norte geothermal inter-connection will be constructed in 1997.

Source: Philippine President Fidel V. Ramos, Power Development.

Regional News - Australia



ATA Energymobile

The ATA Energymobile is a semi-trailer-type vehicle weighing around eight tonnes. It travels all around Victoria, and has done extended tours along the east coast of Australia, from northern Queensland down to Tasmania.

The Energymobile contains a series of renewable energy displays, with appliances such as compact fluorescent lamps, a vacuum cleaner, fans, washing machine, solar water-pumping display, micro-hydro display, etc. The displays are completely powered from the built-in solar power system, which consists of numerous fixed and movable solar panels, large Sonnenschein batteries and both 12- and 24- volt inverters (one modified-square wave type and one sine-wave type).

Setting up the displays takes an hour or two once the truck has arrived on-site.

SEICA

The Sustainable Energy Industries Council of Australia (SEICA), Inc., is an 'umbrella' organisation, which provides federal representation of industries concerned with both energy efficiency and renewable energy.

SEICA's primary mission is to create new business and employment in sustainable energy industries.

SEICA members include companies that work in the areas of energy-efficient building materials, appliances, and equipment; renewable energy equipment for heat and elec-

ATA

ATA, the Alternative Technology Association, is a non-profit community group that works to promote the development and use of environmentally friendly and sustainable technologies in Australia. The ATA has been in existence for twenty years now. The members, around 750 people, receive the 90-page magazine called *Soft Technology* four times a year. In addition to these members, there are around 1,500 subscribers to the magazine. ATA owns a 60-kW wind generator, which feeds electricity into the main grid. The Association also organises exhibition trips with its Energymobile vehicle.

More Info: Lance Turner and Herbert W. Wildes, ATA, Alternative Technology Association, 247 Flinders Lane, Melbourne VIC 3000, Australia.

Ph/fax: +61-3-9650-78831-8574

Email: claire@suburbia.apana.org.au.

tricity; biofuels; energy auditing; and energy services.

SEICA was incorporated in late 1993 to develop the job potential in the sustainable energy industry by uniting the many and varied industries that make up the sustainable energy industry in Australia into a strong lobbying voice. SEICA has grown from 17 founding members to over 50.

More Info: SEICA, Inc, PO Box 411, Dickson ACT 2602, Australia.

Ph/fax: 61-6-241-92601-9266, e-mail: lcs24@uow.edu.au.

Renewables in Australia:

- The University of New South Wales is developing multi-layer, thin film PV cells which reduce the costs of electricity from \$10 to \$1 per peak watt.
- The Australian export market in renewable-energy technology grew to \$30 million per year to 70 countries.
- There are 250,000 solar water heaters installed in Australia.
- An Energy Card system was launched by the Federal Government in May, 1995 to meet the greenhouse gas reduction target. It is a no-deposit, low-interest credit facility designed to encourage the purchase of solar water systems. It is expected to be used to purchase other approved products that encourage the efficient use of energy, including insulation and double-glazing.
(source: SEIAA)

SEIAA

The Solar Energy Industries Association Australia (SEIAA) is a leading industrial body in Australia representing members around the country who are involved with solar water heating applications, solar pool heating, photovoltaic, wind as well as micro hydro-power supply systems, and solar-efficient house design. In some states of Australia (e.g., Victoria, New South Wales, and Queensland), people are not eligible to obtain a rebate unless the remote area power supply (RAPS) system has been designed and installed by a SEIAA-accredited person.

SEIAA is extremely keen to hear from overseas countries that need assistance in conducting training courses for the installation and design of RAPS systems and for the installation of solar water heaters or that wish to explore import/export or joint venture opportunities.

More Info: Ray Prowse, SEIAA Inc. 1st Floor, 505 St Kilda Road, Melbourne VIC 3004, Australia. Ph/fax: 61-39866-89771-8922, Email: solar@world.net.

Creating a Sustainable Energy Future for Australia

By Carrie Sonneborn, SEICA, Australia

Scenarios for future energy supply and demand in Australia have been constructed for the next 25-30 years by ABARE (Australian Bureau of Agricultural and Resource Economics) using the MENSA model (Multiple Energy Systems of Australia). MENSA is supplied with a large database on various energy efficiency and energy supply products, from insulation to refrigerators to power stations. Given the scenarios for the future demand for energy services, MENSA chooses the combination of demand-side and supply-side technologies which delivers the energy services at least cost, averaged over a specific time period. In a world without institutional barriers to energy efficiency and renewable energy, the MENSA model predicts that up to 64% of total electricity generation within the next 30 years could be contributed by renewable energy.

Job Creation, Wealth & Cost Savings

A 1994 report of the 'Green Jobs in Industry Program' was produced as a joint project of the Australian Council of Trade Unions (ACTU) and the Australian Conservation Foundation (ACF). It stated that, in Australia, the sustainable energy industry could generate around 100,000 new jobs over the next two decades, including induced jobs i.e., where energy savings mean that businesses and customers have more disposable income or become more competitive.

Job-creation and economic growth, combined with lower energy consumption, are illustrated by industry case studies produced by the ACTU / ACF Green Jobs Unit as part of its 'Cut Waste and Energy' initiative. One example is Westpac Banking Corporation, which spent \$1.8 million in the first year and \$1.1 million in the next to reduce energy costs in all of its 1200 Westpac buildings. As a result, the company reduced its energy costs by \$4 million per year.

The Greenhouse Challenge

Australia's National Greenhouse Response Strategy (NGRS) Greenhouse 21C, the \$63-million package of measures, was released in March, 1995. The majority of the cake went to coal technology and fossil-fuel-intensive industries. The biggest slice, \$25 million, was directed to the transfer of 'clean coal' technology to India. Focusing aid investment on energy efficiency and renewable energy would be more effective in reducing greenhouse gas emissions.

Nonetheless, cooperative agreements are pushing ahead as the centrepiece of federal action under Greenhouse 21C. If properly implemented, they could certainly provide opportunities for the sustainable energy industry to supply the necessary energy efficiency as well as renewable energy products and services. SEICA is actively involved in work to help make this happen. This effort has been named 'The Greenhouse Challenge.'

SEICA's Approach

SEICA's proposal of specific measures was submitted to the Federal Government as part of its consultation regarding Greenhouse 21C. The key elements of that submission were:

1) A moratorium on coal-fired power stations.



Pyramid Power produced by SRE, Southeastern Renewable Energy Unit, Illawarra Electricity Utility, Australia.

2) A small carbon tax to promote energy efficiency and renewable energy.

3) Mandatory energy standards to be established for all buildings, vehicles and equipment. This would encompass and expand the work being done on Minimum Energy Performance Standards for appliances, Home Energy Rating Scheme, and the Building Energy Code of Australia.

4) Electricity and natural gas retail/distribution utilities to be encouraged to act as 'energy service companies' and/or to spend at least 1% of revenue on assisting customers to become more energy efficient.

5) Coordination of microeconomic reform in the restructured electricity industry. Inclusion of external costs e.g., the cost of social and environmental impacts of electricity production in the cost to the consumer. Removal of cross-subsidies within the electricity industry, since they send incorrect signals to consumers, undermining the marketing activities of the sustainable energy industry.

6) An end to land clearing and increased tree planting as the basis of a biomass energy industry.

7) Implementation of the interim greenhouse gas reduction target: stabilization in the year 2000 on the 1988 level, and 20% reduction by the year 2005.

8) Comprehensive promotion and expansion of low-interest Energy-Card-type financing to include a wide range of energy efficient products and services.

9) Removal of sales tax from all certified sustainable energy equipment.

Conclusions

Renewable energy, energy efficiency, and efficient use of natural gas are central to the achievement of a sustainable energy future. Due to major imperfections in Australia's energy market, this can only be achieved through a concerted program of government intervention as outlined. Such a program has the potential to benefit the Australian economy as well as assisting greenhouse gas reduction.

The article is shortened by the editors. More Info: SEICA. See p 6

Regional News - Africa

INforSE, East & Southern Africa Regional Workshop, Harare, September, 1995

By Timothy Ranja, FWD/AFREPREN, Nairobi, Kenya, INforSE - Eastern Africa Regional Coordinator.

The regional INforSE workshop was held after the International Solar World Congress, Harare, Zimbabwe, on 19 September, 1995. It brought together six participants from East and Southern African regions, along with Ghana in Western Africa.

The objectives of the workshop were to review the INforSE activities in the region, to launch the regional study, and to discuss new, possible regional initiatives.

Launch of Regional Study

The outline of the new regional INforSE study was presented. It will deal with the socio-economic benefits of renewable energy technologies in East and Southern Africa. The objective of the study is to examine successful sustainable energy activities with particular reference to biomass energy technologies in selected East and Southern African countries and to assess their socio-economic impacts. The main emphasis will be on job creation and potential contribution to sustainable development. The study will also recommend policy options that promote sustainable biomass energy technologies in the region and outline guidelines for replication of proven dissemination strategies. This will be achieved by carrying out a number of case studies in selected countries and the results will be used as the basis for

initiating one or two promising biomass energy technology field dissemination options.

To launch the study, a thematic paper entitled "Socio-Economic Benefits of Renewable Energy Technologies: Case Studies of the Kenya Ceramic Jiko (KCJ) and the Maendeleo Stove" was presented (available from FWD). The paper describes the status of renewable energy technologies in the region and uses the two case examples from Kenya to demonstrate the pertinent social and economic benefits. It concludes by highlighting the various lessons learned from the success of these projects, which can be replicated in other parts of the region. The presentation was followed by discussions in which the participants reviewed experiences in their own countries.

Possible Regional Activities

Mr. Max Mapako of Ghana Solar Energy Society briefed the workshop on the World Solar Summit Process (see article by Masse Lo, page no. 3.) and the GEF-UNDP solar electrification project in Zimbabwe.

A proposal for a regional INforSE workplan was developed. It includes the following activities:

- Conducting a study on job creation by introducing renewable energy technologies (RETs), e.g. wind-pumps.
- Participation in the World Solar Summit Process and in the Summit itself.

- Assessing the penetration level of selected RETs such as improved cookstoves. The results will be published in a study/policy document.
- Assessing key RETs' local production capabilities.



Kijito wind pump in Kenya.

GEF-UNDP Solar Programme

A number of Zimbabwe-based NGOs are involved in the implementation of the GEF Solar Programme. The programme is to facilitate the installation of a minimum of 9,000 household solar electric systems in rural areas over a three-year period as well as small community institutional lighting systems, financed through a revolving fund mechanism, as a catalyst for sustainable rural energy development.

KARADEA, Solar Training Facility in Tanzania

The KARADEA Solar Training Facility was set up to demonstrate the viability of solar energy for rural areas and to meet the growing demand for solar training in the region. The facility site has abundant solar and wind resources. The facility has demonstration equipment, with classroom and workshop space, as well as a solar library. The facility provides services in design, procurement, installation and repair of solar electric systems.

Presently, an apprenticeship program is run for periods of from 3 months to one year, and specially tailored courses is given. Small community-based solar credit programs are commencing. The next Basic Solar Installation course will be presented in collaboration with Energy Alternatives Africa, Nairobi, Kenya in July, 1996. Skilled practitioners, university-level students, and volunteers are also welcome to the international fieldwork program.

The facility was established in 1993 and is administered by KARADEA, Karagwe Development Association, which is a community development and women's organisation.

More Info: Oswald Kasaizi, KARADEA, Solar Training facility, PO Box 299 Karagwe, Kagera, Tanzania, Tel: Karagwe 128. and Mark Energy Alternatives Africa, PO Box 76406 Nairobi, Kenya. Ph/fax: 254-2- 565616.

Regional News - Africa

Energy in Burkina Faso, 90% Renewable But...

By Godefroy Thiombiano, APER - Burkina Faso

Burkina Faso is part of the Sahel area south of the Sahara desert. It has a surface of 275,000 km², a population of 10.5 million, and a gross national product of 300 US\$/year (12% of the European average). The final energy consumption is 1.3 MWh/capita/year, (Approx. 7 % of world average) of which 90% comes from wood and other biomass resources, 8% from imported oil and 2% from electricity. The potential for renewable energy consists of biomass, direct solar energy (3-5 times as much incoming solar energy per m² as in Europe), and some hydro-power resources.

Energy Policy

In a situation with diminishing firewood resources and an oil bill equivalent to 25% of export earnings, the various official development plans make energy an everyday concern, with the following aims:

- eradication of desertification by reducing wood consumption via rational use of wood energy;
- reduction of oil costs by diversifying supply to more suppliers.

Rational Use of Biomass

To improve the efficiency of wood combustion, improved cookstoves are disseminated that use wood and charcoal as well as other alternative fuels, such as oil, butane gas, and alcohol. The models that burn wood and charcoal are of a design that is three to four times more efficient than the traditional fireplaces, which are constructed of three stones.

Between 1980 and 1990, 20,000 improved stoves were disseminated annually, mainly in the rural areas. The types designed for rural areas were made of clay and built by the users. For urban areas, metallic stoves (known as Ouaga Metallic, Burkina Mixte, and others) and ceramic ones were used. They were disseminated with the help of artisans' organizations.

It must be noted that there is a lack of awareness of the need for efficient energy use. The different evaluations show considerable variation in the acceptance of the technologies, especially in rural areas.

On average, 2,000 ha of forests is saved per year due to the wood conservation effort.

Solar Energy

The direct use of solar energy is just beginning, and does not contribute significantly to the energy balance of the country. A number of technologies are applied to use this resource for, e.g., water heating, communication, light, food processing, conservation of medicine. The following applications illustrate these uses:

- dissemination of systems for water heating. This is a mature technology with local production of systems although the materials are imported.
- dissemination of solar driers. This is also a mature technology, fulfilling a real need. The systems are produced locally, and the dissemination is made easier by acceptance fuelled by existing habits of drying certain products as well as by the market for dried products.
- installation of systems for rural electrification.

In spite of the interest, a larger dissemination of solar energy will not take place before certain measures are in place:

- an inspection/certification of the different available systems and an evaluation of their impacts;
- a reduction of import duties on solar energy systems and components.

Electric Energy

More than 95% of the electricity is produced and distributed by SONABEL, the national electric utility of Burkina Faso. The production is mainly done by power stations fuelled with heavy oil (78%); the remainder is from hydro-power. The main consumer is the state, which buys almost 2/3 of the production, mainly for air-conditioning, indoor- and street-lighting.

Efforts are made to raise the awareness of the need for more rational use of electricity by developing better user-habits and by using better equipment. Energy audits of the 10 largest consumers showed potentials for saving 20-50% of their electricity bills.

Conclusion

Even though the state of Burkina Faso has made an effort to support energy research, it is necessary that future programs be supported by bilateral and multilateral cooperation. The IBE (Institut Bukinabe de l'Energie) should play a number of roles in programmes to tailor technologies to small users, to disseminate research results to artisans, and to contribute engineering expertise.

It is also time to start new mechanisms that can make research and development results available to the public. A unit for support for and collaboration with local organizations would help to disseminate such results to the community, facilitating cooperation between researchers and the general public.

Translated, edited and shortened by the editors.

APER - Association pour la Promotion des Energies Renouvelables is under establishment with the aim of bridging the gap between the specialised institutions and the general public within the field of sustainable energy use. APER plans to create a file of persons from all over the world that will share their ideas and develop cooperation.

More Info: Godefroy Thiombiano, APER B.P. 4461 Ouagadougou 01, Burkina Faso. Ph/fax +226-3670-09/29.



Efficient cookstove

Regional News - Europe

European Environment Ministers' Conference, Sofia, October '95

By Gunnar B. Olesen, OVE, Denmark
INforSE-Europe Coordinator

Questions on atomic power spurred a long debate during the last preparations for the Conference of the Environmental Ministers from 52 European countries plus USA and Canada. The decision of the host country, Bulgaria, to start their oldest and most dangerous reactor, Kozloduy 1, shortly before the conference, added an extra dimension to the debates.

Regarding energy, the ministers agreed at October 23-25 in Sofia that:

- unsafe nuclear installations should be phased out as soon as possible, in particular unsafe nuclear reactors. In implementing this, special emphasis should be placed on development of new and renewable sources of energy and on enhancement of energy efficiency (Ministerial Declaration, reaffirming the agreement from the previous ministerial meeting in Luzern).
- 8 countries are now specifically against nuclear power (Ministerial Declaration, footnote).
- a European energy conservation strategy should be prepared and adopted for substantial reduction of primary energy use by 2010 (Environmental Program for Europe - EPE).
- they will support the Berlin Mandate with a view to having a protocol to the Climate Convention in 1997 (EPE).
- they will take into account the possibilities for reducing the volume of transport (EPE).
- they will promote the use of economic instruments in energy and



Bulgarian NGOs protesting against nuclear power in front of the Environmental Ministers' Conference at the Sofia Cultural Palace.

transport sectors, such as CO₂/energy tax (to achieve Climate Convention commitments) and international air fuel taxation (EPE).

From the NGO side, it was also proposed to start processes for actually closing down specific nuclear power plants. While this was not included in the official statements, some countries were open to starting informal discussions on the topic.

Active NGO participation

The conference and its preparation have admitted more NGO participation than have most other international processes. In addition, the environmental NGOs held a parallel conference, at which a NGO declaration was adopted before the ministers met and a number of interesting workshops took place. There were workshops on assessment of renewable energy in Central and Eastern Europe

(INforSE-Europe project, see Sustainable Energy News No. 9 and on the environmental space concept.

Next Conference in Denmark

The next Pan-European Environmental Ministers' Conference will be in May, 1998 in Denmark. For this conference, the ministers promised large participation for NGOs and eventually a special role in evaluation of the implementation of the new guidelines for public participation that the ministers adopted. These guidelines will be the basis for a convention in 1998.

Mochovce

The Slovak government is now trying to finish the Mochovce nuclear power plant with funding from Russia, the Czech Republic, and Western commercial banks. Lending offers have been received from Russia and from the Czech Republic, but they are not sufficient to finish the plant. The key question for the project, at the moment, seems to be whether any Western banks will risk financing a Russian-designed nuclear power plant to be finished by Skoda. The anti-Mochovce campaign continues, coordinated by Slovak NGOs and Global 2000 in Vienna.



Plenary of the Environmental Ministers' Conference, Sofia.

Regional News - Europe

Compiled by Gunnar B. Olesen, OVE,
Denmark, INforSE-Europe Coordinator

EU Commission Cuts Renewables Funding 18 Million ECU

In spite of decisions of the European Union (EU) Council of Ministers and the EU Parliament, the EU Commission decreased the support for research and development in renewable energy in the Joule project. While it was decided to give renewable energy 60% of the support, the Commission decided to give only 42% of the budget, or 18.4 million ECU, less than decided by Council and Parliament. Apparently, Commission officials have altered evaluations from technical experts to reduce the number of renewable energy projects with good marks in the evaluation-procedure for the funding.

The Commission is now investigating the case. As a first result of these investigations, the leader of the office for renewable energy R&D, Wolfgang Palz, was replaced from his position. He is accused of giving out

information that made the public aware of these strange procedures in the Commission's General Directorate for Research, DGXII.

INforSE - Europe and many other organizations have complained of this action of the Commission, pointing out that it undermines the decision structure of the EU. INforSE - Europe sent an open letter to the Commission, demanding that the missing funds for renewable energy R&D be compensated with new tender for renewable energy projects, funded from other budget lines, e.g., from funds originally allocated to nuclear R&D.

EU Electricity Market

A new compromise proposal is under discussion for the EU internal market on electricity. In this proposal, environmental concerns and obligations to buy electricity based on renewable energy are part of the utilities' public service obligations. It is up to each country to decide how much renewable energy it wants. In addition to the renewable energy obligations, the directive will allow for free access of electricity across borders from

utility to utility based on cheapest production costs.

The proposal still has a number of unsolved questions, especially regarding the "single buyer" concept, where one utility can be the buyer of electricity from all independent producers. The proposal will be discussed by the EU energy ministers on December 14. This meeting will, at best, lead to a common agreement that could result in a principal decision on a directive next summer.

New Thermie Funding

EU funding for promotion and dissemination of energy technologies is now available under the Thermie program, administered by the EU Commission's General Directorate for Energy, DGXVII. The framework budget for Thermie is 532 million ECU, covering renewable energy, rational use of energy, and fossil fuels for the period 1994-98. The coming round of project proposals has a deadline of February 1, 1996.

More Info: EU-Commission, DGXVII, Thermie, 200 rue de la Loi, 1049 Brussels, Belgium, fax +32-2-295 0577.

Regional News - Latin America

Potential of Solar and Wind Energy for Desalination

By Emilio Lebre La Rovere,
PPE/COPPE/UFRJ and IED, Brazil,
INforSE-Latin America Coordinator

The potential of using solar and wind energy for water desalination is receiving increasing attention in Latin America, as illustrated by its important role in three recent major events held in the region:

1. During the 2nd Meeting for Development of Solar, Wind and Biomass in Brazil (Brasilia meeting, held June 5-9, 1995 - see Sustainable Energy News No. 10), the opening session included the launching of the Brazilian Competition on Desalination and Water Pumping Systems.

2. The International Workshop on Water Desalination - Technology, Equipment, Energy Sources and Environmental Impacts, held in Petrolina (State of Pernambuco, Northeastern

region of Brazil) July 26-28, 1995, also included an exhibition of water desalination equipment attended by Brazilian and international manufacturers as well as technical visits to local installations.

3. The Workshop on Alternative Technologies to Increase Water Availability in Latin America, held in Lima, Peru, September 19-22, 1995, an initiative of the Organisation of American States (OAS), included discussion of the state of the art and analysis of case studies from different Latin American countries.

This interest can be explained partially by the increasing dissemination of water desalination equipment that uses reverse osmosis technology in areas where fresh water shortages are acute and solar or wind energy potentials are large, such as in the Northeastern region of Brazil.

Two NGOs located in Rio de Janeiro, Instituto ACQUA and IED, with the collaboration of COPPE/UFRJ, have now started a study of technological alternatives using solar and wind energy to supply fresh water to the touristic region located 100 km north of the city. During the high season and holidays, the local water system supply collapses due to a tenfold increase of the population.

This 4-month study is the first stage of a more ambitious project. It will assess the water demand and supply, quantify the apparently good solar and wind energy potentials in the region, and make an assessment of the most appropriate technologies to meet the local needs. The installation and monitoring of selected pilot projects is scheduled for a second phase, paving the way to wide dissemination of the most successful alternatives.

Publications on Internet

In this issue we dedicated our list of publications to informations available on Internet.

There are literally thousands of sites on the Internet of interest to sustainable energy NGOs.

CREST publishes an Alternative Energy Guide to the Internet for information online.

The AE Guide Available:
gopher.crest.org:70/00/online/internet/aeguide.txt
<http://solstice.crest.org/renewables/sites.html>

Here are some sites of interest:

Solstice

What is on Solstice? see article on page 13.

International Solar Energy Society (ISES)

ISES is the umbrella body for solar-energy-related disciplines. It spans countries and continents, and aims to unite researchers with workers in applied solar energy in the search for better applications and technologies. Information on their activities and publications can be found at their site. <http://www.ises.org/>

Centre for Alternative Technology (CAT)

CAT is an internationally renowned and award-winning display and education centre with 20 years experience, the best of its kind in Europe. <http://www.foe.co.uk/CAT/>

Energy Efficiency and Renewable Energy Network (EREN)

EREN is a dynamic and comprehensive source of electronic information for the public, researchers, and professionals needing information on energy efficiency and renewable energy. <http://www.eren.doe.gov>



Home Power Magazine

The magazine about independent folks and the alternative energy they use. Based in (very) northern California, they write practically about "off-the-grid" living both here and abroad. <ftp://sunsite.unc.edu/pub/academic/environment/alternative-energy/energy-resources/homepower-magazine/>

Solar Cooking Archive

All about solar cooking. Includes images, construction plans, an archive of the Solar Box Journal, and more. <http://www.xmission.com/~seer/sbcn/index.htm>

Wind Energy Weekly

Archives of AWEA's electronic newsletter <http://solstice.crest.org/renewables/awea/wew.html>

Solar Design Associates (SDA)

SDA, is a group of architects and engineers dedicated to the design of sustainable buildings and the engineering and integration of renewable energy systems which incorporate the latest in innovative technology. <http://www.ultranet.com/~sda/>

THERMIE

It aims to provide users with a wide range of energy information resulting from the associated measures of the European Commission's THERMIE programme. <http://erg.ucd.ie/opethermie.html>

Finnish Wind Power Association:

Hosts a wind-power FAQ, an astonishing list of European wind energy manufacturers, and links to other wind-sites. <http://alpha.cc.tut.fi/~vihriala/fwpa/fwpa/home.html>

European Wind/Solar Energy Information Resources

Mostly European list of Associations, companies and universities in the sustainable energy field. <http://keynes.fb12.tu-berlin.de/luftraum/konst/adressen.html>

International Solar Center Berlin

Site includes a schedule of solar-relevant events, other WWW-sites dealing with renewable energy, and more information sources about renewable energy. Offered both in English and German. <http://emsolar.ee.tu-berlin.de/iscb/home.html>

World News - Continued

European Union & Renewable Energy in the Third World

By Jacob Ulrich, FED, Denmark

The Forum for Energy and Development (FED), is currently responsible for a number of investigations into the workings of major donors in the field of renewable energy including the European Union (EU).

The analysis of the role of the EU will result in at least two documents: One will be a mapping of relevant funding opportunities within the EU system for NGOs and others working with renewable energy in the Third World. In the EU system, there is at present no specific programme for Third-World renewable energy. But there is, in one end of the system, a huge development-aid mechanism. This development-aid system covers almost all Third-World countries. It includes a number of sub-programmes and budget lines, some of which are

relevant also to NGOs working with renewable energy. Funds are mainly being administrated by DG I (External Economic Relations) and DG VIII (Development). At the other end of the EU system, there is an equally voluminous research, development, and demonstration mechanism under the title "the 4th Framework Programme." It has energy technologies as one of its core areas in the Joule and Thermie programmes, and within this programme, Third-World renewable energy activities are occasionally being supported. Funds are channelled through DG XII (Science, Research & Technology) and DG XVII (Energy).

The other report on the EU that is to be prepared by the FED will analyse policy questions, of which preliminary investigations suggest that two issues are of special importance.

One is the lack of an overall EU energy policy for the Third World.

The EU has not clearly decided what its objectives are in the sector and how objectives are to be pursued. Consequently, the EU's activities are sporadic and arbitrary.

Secondly, there is a lack of co-ordination between the EU energy research machinery and the EU Third-World development machinery. This means that generated experiences are not being used in an optimal manner, and that the quality of EU development work in the area of renewables is of a lower standard than it could be.

Formulating and adopting a renewable energy policy for Third-World activities could increase and improve the quality of EU support for the sector in the Third World. Hopefully, the FED will be able to suggest ways to do this in the near future.

More info: *INforSE Secretariat.*

Events

* INforSE Campaign activities

December 4-5, 1995

Conf. on Changing Politics of Int. Energy Investment, London, UK

Info: Lacy Curtis-Ward, The Royal Institute of Int. Affairs, Chatham House, 10 St James's Square, London, SW1Y 4LE UK. Ph/fax: 1719-57-5700/-5710.

December 5-7, 1995

Energy & Environment, Marseilles, France

European Conference and Exhibition
Info: Philippe Jacqu , SAFIM, Parc Chanot, BP2, 13266 Marseille Cedex 8, France. Ph/fax: +33 91-761600/-221645.

December 14-16, 1995

SoSustainable?, Barcelona, Spain

Int. Conf. on Tecnology, Sustainable Development and Imbalance

Info: Hores extraordinaries, Mallorca 327, pral. la, 08037 Barcelona, Spain. Fax: 34-3-4576212, email: sostenible@euctit.upc.es

January 8-12, 1996

3rd International Eco-City Conference, Dakar, Senegal

Info: Ecovillage at Ithaka, Anabel Taylor Hall, Cornell University, Ithaka N.Y. 14853. Email: ecovillage@cornell.edu.

January 22-26, 1996

Asian Solar Summit, Kuala Lumpur, Malaysia

Info: see page no. 3.

February, 1996

PV in Buildings, UK

Series of Seminars

Info: The British Photovoltaics Assoc./ IT Power, The Warren Bramshill Road, Eversley, Hampshire, RG27 0PR, UK. Ph/fax: 1734-73-0073/0820, email: itpower@gn.apc.org.

February 4-9, 1996

Course on Media and Environment, Dartington, UK

Info: Schumacher College, The Old Postern, Dartington, Devon, TQ9 6EA, UK. Ph/fax: 1803-86-5934/-6899.

February 12-14, 1996

2nd International Renewable Energy, South Asia '96 Conference New Delhi, India

Focus on marketing, financing.

Info: Cassy Kurtzman, Alternative Development Asia Ltd. 5F, 3 Wood Road, Wanchai, Hong Kong. Ph/fax: +852-2574-9133/-1997, Email: mcseym@hk.super.net.

February 22-23, 1996

Opportunities for Renewable Energy Technologies in Europe, London, UK

Overcoming institutional & non-technical barriers.

Info: UK-ISES, 192 Franklin Road, Birmingham B30 2HE, UK. Ph/fax: 1214-59-4826/-8206.

March 4-7, 1996

Afro-Asian, Kathmandu, Nepal

3rd Int. Conf. on Power Development

Info: C. Varma, Int. Assoc. on Electricity Generation, Transmission & Distribution, CBIP Building, Malcha Marg, Chanakyapuri, New Delhi 110021, India. Ph/fax: +91-11301-5017/-6347.

March 4-6, 1996

Building Energy, Boston, USA

1st Int. Solar Electric Buildings Conf., Renew '96, 12th Annual Quality Building Conf.

Info: Northeast Sustainable Energy Assoc., 50 Miles Street, Greenfield, MA 01301, USA. Ph/fax: +1-413-774605-1/-3.

March 22-26, 1996

Mediterranean Solar Summit, Valletta, Malta

Info: See page no. 3.

*April 26, 1996**

Chernobyl +10 Year Conference, Kiev, Ukraine

Info: INforSE Europe

June 3-7, 1996

Energex '96, Beijing, China*

The 6th Int. Energy Conference and Exposition.

Info: Meng Xiangnan, China Solar Energy Society, 3 Huayuan Road, Beijing 100083, China. Ph/fax: +86-1-201-7009/-2880.

*June 3-14, 1996**

Habitat II: UN Conference on Human Settlements, Istanbul, Turkey

Info: UN Centre for Human Settlements, Room DC2-0943, United Nations, New York, NY 10017, USA. Fax: +1-212-963-8721.

June 15-21, 1996

World Renewable Energy Congress IV, Denver, Colorado, USA

Info: A.A.M. Sayigh, WREN, 147 Hilmanton, Lower Earley, Reading RG64HN, UK. Ph/fax: +44-1734-61136-4/-5.

June 19-21, 1996

Asia-Pacific Conf. on Sustainable Energy & Env. Technology, Singapore

Info: APCSEET Secretariat, Nanyang Technological University, Nanyang Avenue, 2263 Singapore. Ph/fax: 65-79-95243/-16178, email: apcse96@ntuvax.ntu.ac.sg.

June 20-24, 1996

ÖKO'96 Messe, Freiburg, Germany

Info: BUND, Landesverband Baden-Württemberg e.V. Dunanstrasse 16, D-79110, Freiburg. Ph/fax: 49-761-88595-0/-90

June 24-27, 1996

9th European Bioenergy Conference, Copenhagen, Denmark

Info: DIS Congress Service Copenhagen A/S, Herlev Ringvej 2C, 2730 Herlev, Denmark. Fax: +45-4492-5050.

June 26-28, 1996

Power-Gen Europe '96, Budapest, Hungary

Info: Ms Nel Jonk, Kaap Hoofdreef 54, 3563 AV Utrecht, The Netherlands. Ph/fax: +31-30-6509-63/-28.

*July 1-8, 1996**

The City as an Organism, Urban Ecology Now and in the Future, Copenhagen, Denmark

Conference and exhibitions on sustainable energy & urban environmental solutions. Part of Cultural City Copenhagen '96.

Info: Niels Lyck, OVE, Blegdamsvej 4, 2200 Copenhagen N, Denmark. Ph/fax: +45-3537-3565/-3676.

July 8-12, 1996

Moscow Solar Summit, Moscow, Russia

Info: see page no. 3.

August 25-31, 1996

Energy Efficiency in Buildings, Pacific Grove, CA, USA

Summer Study Seminar

Info: ACEEE, 2140 Shattuck Avenue, Suite 202, Berkeley, CA 94704 USA. Ph/fax: +1-510-54999-14/-84.

September 16-19, 1996

EuroSun '96, 10th Int. Solar Forum, Freiburg Germany

Info: ISES-Europe or Deutsche Gesellschaft für Sonnenenergie, Augustenstrasse 79, 80333 München, Germany. Ph/fax: +49-8952-4071/-1668

*September, 1996**

World Solar Summit, Harare, Zimbabwe

(see page no.3.)

October 15-18, 1996

ENEF'96, Slovakia

2nd Int. Conf. & Exhibition of Assoc. of Energy Managers of Slovakia.

Info: Marian Rutsek, Kukucinova 5, Banska Bystrica, PSC 97401, Slovak Republic. Ph/fax: +42-88-7233-923/-20.

Renewable Energy Project in Nepal

By Rajesh Sharma, PFL, Nepal and Ari Lampinen, TFL Finland.

Plants for Life (PFL), a Nepalese NGO, has disseminated several renewable energy technologies via an integrated program that gives high priority to socially disadvantaged groups, e.g., the untouchable caste.

The program has been effective in the Eastern and Central part of Nepal, especially in the Churia Hills area, which has been affected by heavy deforestation and consequently, erosion, flood, and ecological imbalance. 40% of the population lives in absolute poverty and is totally dependent on free forest resources.

Within the past 3 years, over 300 biogas plants and over 200 improved cooking stoves have been disseminated, while 600 families received loans and training. Of these, 90% changed their firewood-selling trade into small alternative businesses. Further, at least 45 solar box cookers have been fabricated by rural women within the last year. Other solar thermal and wind-energy applications are currently under development.

The PFL solar energy subprogram is supported by Technology for Life (TFL) a Finnish NGO (member of INforSE).



Solar cooker under construction by women from untouchable caste in Nepal.

A recent development is a parabolic solar cooker constructed with mainly local materials in 3 days. The cost of materials was only \$3. It has two parabolic bamboo baskets about 1 m in diameter each. A mixture of clay, cow dung, mustard oil cake, and pedihusk is prepared, pasted on the parabolic baskets, dried, smoothed, dried again and sanded. Finally, aluminium reflector paper is glued onto the surface. A

bamboo crate holds the parabolic baskets, allowing them to move vertically from 30 to 90 degrees. The model can cook 0.5 kg rice in 35 min. with adjustments every 12-15 min. This is much quicker than solar box cookers. Further improvements are under way.

More Info: PFL, PO Box 21, Hetauda 5, Makwanpur, Nepal or TFL, Kaupunkatu 12 A1, 40100 Jyväskylä, Finland. Ph: +358-41617582, email: ala@jyu.fi.

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