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Write to Sustainable Energy News

Successes and failures of sustainable energy developments, strategies, dissemination projects, new developments of marketable technologies, political efforts on the sustainable energy scene, NGO-activities for sustainable energy. Sustainable Energy News welcomes input on all these subjects, from news about small NGOs up to evaluations of the latest World Bank financed projects.

We prefer contributions of 1/2 - 1 page A4 to keep the publication as a newsletter; but longer articles can also be used. Illustrations to the articles are very welcomed. Costs related to accepted articles can be covered upon request.

Sustainable Energy News is printed in 1800 copies of which 1100 are distributed via mail, while the rest is used by the INforSE coordinators at seminars etc.

This issue includes Sustainable Energy Contact List - Europe. For European readers and those having interest in European affairs the coming issues will contain Sustainable Energy News - Europe.

Front page photo
Tamil Nadu, India/Ole John Film
Editorial:

Clinton's Slow Progress on Energy Policy

We hoped for a parting of the seas. But even a bright, young and vibrant Democratic president and his environmentally aware vice president cannot produce miracles in their first year in office. The deeply entrenched bureaucratic system is too big and unwieldy to move quickly or with ease. Moreover, corporate control of U.S. energy policy has been the norm for decades. Shaking free from the grip presents one of the toughest challenges to the Clinton Administration. President Clinton is, however, beginning to make some progress toward more sustainable energy policies.

In his first eleven months, President Clinton has emphasized the need for a shift in U.S. energy priorities away from fossil fuels and nuclear power to expanded renewable energy and energy efficient technologies. While these messages have set the course, aggressive policy proposals have been slow to follow. Instead, bland strategies have come forward that rely on voluntary industry participation, market signals for consumers and business, and a "lead by example" effort to reduce energy consumption within the federal government itself.

President Clinton's Earth Day speech on April 22, 1993 outlined a broad array of initiatives to kick off his environmental policy agenda. Central to this list was Clinton's commitment to develop a climate change plan to comply with the international global warming treaty signed by President Bush at the Earth Summit in 1992 in Brazil. Clinton pledged to cut emissions of greenhouse gases to their 1990 levels by the year 2000 and to continue the downward trend thereafter.

This announcement began a six-month process to develop a national plan to achieve the President's goal. However, after many months of substantive and voluminous input to the administration, environmentalists were disappointed to find that the final plan relies heavily on voluntary greenhouse gas reductions by industry and will barely make a dent in the CO2 emissions from transportation - responsible for one-third of the global warming gases in the U.S.

While the environmental community registered near-unanimous disappointment with the Climate Change Plan, industry gave across-the-board support. Central to the environmental communities effort on follow-up from the Plan is to put teeth into the President's personal vehicle fuels efficiency which will be developed over the course of the coming year.

Two critical issues lie immediately ahead. The proposed Department of Energy (DOE) budget for the Fiscal Year 1995 provides the new Clinton DOE with an opportunity to shift funding from heavily subsidized nuclear power and fossil fuels to the previously underfunded research, development and commercialization of renewable energy and energy efficient technologies. The magnitude of the shift Clinton proposes to Congress will become another barometer of the President's commitment to positive changes.

Next will be implementation of the initiative to reduce energy consumption within the federal government, the nation's largest energy consumer. The early pomp and circumstance has yet to produce concrete programs that provide building managers with the necessary incentives and knowledge. Environmentalists are offering technical assistance and public relations support, but are expecting more progress in the next six months than has been seen to date.

Despite the slow start, there remains reason for optimism about the future. Clinton has turned the corner in the development of a more sustainable U.S. energy policy and it is up to the grassroots activists in conjunction with the public interest community, both in the U.S. and abroad, to push the large bureaucratic system down the street. We will not be alone in this endeavor however, as President Clinton and Vice President Gore have surrounded themselves with talented political and senior staff who believe in a sustainable energy policy built upon a foundation of renewable energy and energy efficiency.

Margaret Morgan-Hubbard, Executive Director, Environmental Action Foundation, USA.
INforSE Update

Since the last issue of Sustainable Energy News, the first coordinating meeting of INforSE has taken place, preparations for an INforSE campaign have come a long way, and regional activities are planned in all regions.

Coordinating Meeting

The first coordinating meeting of INforSE was held at October 10-15, in Denmark. 8 coordinators/contact-persons from all regions had their first opportunity to make a truly worldwide planning of INforSE activities. During the meeting it was decided to launch a global Campaign on Sustainable Energy and Social Development (see later), and a number of guidelines and common activities were discussed. High priority was given to develop the full regional structure of INforSE in the coming 3 years.

At the meeting Gunnar Olesen (OVE) and Rene Karottki (Forum for Energy and Development) were approved as INforSE secretaries. The technical assistance available to INforSE was presented by Folkecenter for Renewable Energy.

During their stay in Denmark the coordinators & contact-persons had time for meetings with the Danish Ministers of Energy and Environment as well as for meetings with a number of energy and development NGOs.

The next coordinating meeting is proposed to be in Washington or Nairobi, Fall 1994.

Action Plan

During the coordinating meeting an INforSE action plan was developed for the coming year. It consists of:

- regional action plans
- INforSE campaign on sustainable energy and social development
- membership campaigns aiming at finding at least one member organization in every country
- development of a Sustainable Energy Contact List with NGOs and other important actors involved in sustainable energy development in all parts of the world. The European part of the list is issued with this newsletter, while the list for the other regions will be issued in Summer 1994.
- maintaining a dialogue with international organizations such as UN, World Bank, European Community and others, concerning promotion of concrete INforSE activities/projects.
- establishment of an INforSE Award

Guidelines for Membership

A general guideline for INforSE membership was developed at the coordinating meeting:

"Eligible for membership are international, national and local independent organizations. All interested organizations will be granted associate membership and will receive the INforSE newsletter.

Core members of INforSE are organizations that are approved as core members by their respective INforSE region and that will support in their words and actions the energy strategy behind INforSE: "Sustainable Energy Development - Towards a World Strategy."

Procedures for membership, approval of members and eventual expelling of members are decided on regional level. Earlier approved members will be regarded as core members.

Individuals can subscribe to the INforSE newsletter (Sust. Energy News) and will be advised to join an appropriate member organization.

INforSE logo chosen at the coordinating meeting.
Regional News - Africa

Eastern African INforSE Meeting

The Eastern (and Southern) Africa INforSE Meeting is scheduled to take place in Nairobi, January 15-16, 1994. It will be a 2 day meeting which will be the beginning of INforSE activities in the region.

There will be a display of different renewable energy technologies. Participants will elaborate:

- a directory of NGOs and distributors of sustainable energy technologies in Africa,
- national level workshops for exchange of information and sharing of experiences,
- follow-up programs on country activities based on "Sustainable Energy Development - Towards a World Strategy".

The participants will mainly be from Uganda, Tanzania, Ghana, Rwanda and Kenya. Limited support for INforSE organizations will be available for travel.


Action Plan & Meeting for INforSE Western Africa

ENDA-Energie, the Western African contact point for INforSE, has proposed an action plan with the following four main activities:

- a regional INforSE meeting in February 21-25, 1994 in Palmarin (150 km from Dakar), Senegal. The meeting will bring together NGOs working on dissemination activities for renewable energy technologies; but it will be open to other organizations as well. The participants will be informed about INforSE and sustainable energy strategies. Another activity of the meeting will be to make proposals for the international INforSE Campaign on Sustainable Energy and Social Development.
- elaborating a catalogue of all NGOs and other organizations active in the sustainable energy development in Western Africa. As there are no focal points for INforSE in Northern or Central Africa the list will, in principle, cover all French-speaking countries in Africa. Because of the limited number of active organizations in this field the list will include NGOs, governmental research institutions, national associations for promotion of renewable energy, and if possible manufacturers and suppliers of renewable energy.
- planning a workshop on dissemination and follow-up of renewable energy technologies for the Rural African Environment. The idea is to organize a 4 week workshop for NGOs, both for experienced NGOs and for new groups in this field.
- enlarging the newsletter "Foyers améliorés" (Improved cookstoves) to cover sustainable energy issues more generally.

For more information and inputs to contact list & strategy, contact: ENDA - Energie, att. Massa Lo & Youba Sokona, B.P.3370, Dakar, Senegal, ph+221-22 5983/2496, fax+221-22 2695, telex 51 456 ENDA TM SG.

Two INforSE Regions in Africa

The two African contact-persons of INforSE have made a preliminary decision of dividing African INforSE activities into two regions, referred to as Eastern Africa and Western Africa. The Western African Region will have French as working language while the Eastern African Region will use English. NGOs from English speaking countries in Western Africa (as Ghana) and French speaking countries in Eastern Africa (as Rwanda) will have the opportunity to chose which region to join.

Solar Success in Rural Senegal

During the last few years ENDA-Energie has had a small but remarkable success with solar cells for rural electrification. The group has disseminated a simple, independent system for rural households, consisting of a solar cell module, a battery, 4 lamps of 15 W and a 12 Volt power outlet for radio, TV, etc. The dissemination included training of the end-users and establishment of local maintenance systems.

Even though solar cells are expensive the prospects for this kind of rural electrification is good because it fits well to the needs in villages of Senegal. Now more than 1500 houses are equipped with this system in Senegal and this number is growing.

More information: ENDA (address above)

Central Biogas Plant in Dar Es Salaam

Construction of a central biogas plant has been decided for Dar es Salaam. It will treat 160 tons/day of organic waste from food industry and a vegetable market. The biogas from the plant will be used for combined heat and power production. The heat will be used for a public bathing facility. The plant will also produce a sludge that will be used as fertilizer in the agriculture.

The plant is based on Danish technology and the investment of about 4 mill. US$ will be financed by GEF (Global Environmental Facility) and DANIDA (Danish International Development Agency)

From: Aalborg Stiftsidsende, Denmark

Protest against Batoka Dam

The Zambezi River Authority and the Zambia-Zambezi joint utility are proposing a 1600 MW hydro power plant, just 30 km downstream of the Victoria Falls. Environmentalists as well as the local villagers protest against the dam, that will flood a large area including the homes of at least 3,000 people. Major protests come from Zambian Committee of the International Council of Monuments and Sites (Icomos), from National Heritage Conservation Commission, and from Chief Mukuni and his Toka-Leya people. Icomos is now lobbying the World Bank to withdraw its funding for the dam.

Regional Workshop and INforSE meeting in New Delhi

The planned 4-day workshop, to develop a strategy for promoting rural energy for socio-economic development through NGOs, will be combined with the start-up of INforSE activities in the Central Asia Region. The workshop and meeting is organized by AFPRO (Action for Food Production) and scheduled for April/May 1994. Limited support for travel expenses will be available for INforSE organizations from the region.

Further information: Raymond Myles, AFPRO, 25/1A, Institutional Area, Pankha Road, “D” Block Janakpuri, New Delhi - 110058, ph -91-11-555 5412/5413/3652, fax -91-11-5500343, telex 31-65899 AFRO IN.

Workshop, Exhibition and INforSE Meeting in Hanoi, Vietnam

The "Workshop on Sustainable Energy and Exhibition of Renewable Energy Products", February 22-25, 1994 in Hanoi, Vietnam will also give room for the first regional meeting of INforSE Asia Pacific. The events are organized by PCATT (Philippine Center For Appropriate Technology & Training). Limited support for travel expenses will be available for INforSE organizations from the region.

Further information by: Benjamin Gertes, PCATT, 224D Silang Street, Batangas City, Philippines 4200, ph -63-43-7231155.

Philippine Solar Dryers

In Philippines solar dryers have showed an ability to raise the value of agricultural products, thus giving increased income and livelihood opportunities to farmers and village dwellers. To increase the use of solar dryers PCATT is conducting two courses on Food Processing Through Solar Dryers at December 6-10, 1993. The courses are made for NGOs in the Batangas province. In one of the courses the topic will be the use of solar dryers for production of dried fish.

PCATT is designing a new combined dryer using solar heat as the main heat source; supplemented with wood or biogas.

Further information: PCATT (address above)

World Bank Loan to Indian Power Sector

The Indian government has asked the World Bank for a loan to finance the construction of coal fired power plants with a total capacity of over 16,000 MW over the next decade. The first part of the loan is now approved, while the remaining parts will be approved within the coming half year.

According to the US-based Environmental Defense Fund (EDF) India can have the same power available for just half the cost if will invest in energy efficiency and demand side management rather than in new supply. They base their view on an Indian Power Sector Assessment, in which a report deals with energy efficiency; made by U.S.A.I.D., the Indian "National Productivity Council" and other Indian government agencies. This report concludes that if little more than half the cost-effective energy efficiency and conservation measures it identifies in the Indian power sector were pursued until 2005, peak generating requirements would be reduced 22,000-36,000 MW in India.


Solar Thermal Power for India?

The Indian Ministry of Non-conventional Energy Sources (MNES) have proposed a 35 MW solar thermal power plant near Jodhpur in Rajasthan. The proposal is to use the Luz technology, that is working successfully in California. However, a system with this technology at Gwalpahari, Hyderabad in India has not been successful.

While the Luz technology is the cheapest technology for direct conversion of solar rays into electricity, it is still more costly than other power plants based on fossil fuels, wind or biomass. So it is questionable if India can afford such a high-cost technology with its development problems and power shortages.

One of the major reasons for the proposal is according to MNES officials the promise of easy money from the Global Environment Facility. The is no technological breakthrough, that could make the technology economical viable in India.

There are, however, technological breakthroughs on the way for the solar thermal technologies. According to the Australian prof. David R. Mills the technology can be improved by better design, a combination with biomass or natural gas, and in the long run with better absorber surfaces. Beside this a production in India might be cheaper than the present production in Israel/USA. But these improvements of the technology are apparently not integrated in the proposed project.

Sources: Down to Earth Oct 15, 1993 & Professor David R. Mills, University of Sidney / ISES, Australia.

Simple Proposals for Solar Distillation

The Ryan Foundation is proposing simple household distillers, using seawater and heated by solar energy and waste-heat as a solution to drinking-water problems. The foundation have developed and field-tested a number of solar stills. One of its proposal is a "RYFO Rice Pot Still" that placed as lid of a rice-pot can produce about 3 glasses of clean water during 30 min. cooking on a wood-stove.

The foundation has published a 60 pages booklet "Survival By Sea-Water" (available for US$ 5), and a number of hand-outs explaining their different proposals.

Further information: Ryan Foundation, 8 West Mada Street, Srinagar Colony, Madras - 600 105 India, ph -2351993
Failure of a renewable energy project

The collapse of the "Urjagram" in Brahampur village near Roorkee in Uttar Pradesh (UP), India is an example of a well-intentioned plan going wrong.

The UP Council of Science and Technology approved Urjagram status for Brahampur with 120 households in 1982. In the following years Alternate Hydro Energy Centre (AHEC) of Roorkee University set up a renewable energy supply system consisting of a biogas plant, two windmills, a solar-operated water pump and TV set, and 10 solar street lamps.

As the village had been electrified already, the villagers were unwilling to switch from electricity to alternative energy. Sushil Giri from Brahampur says "A few households began to use biogas; but within two months, the biogas supply became erratic and its users had to revert to fuelwood and dung cakes."

In 1984 the state Non-conventional Energy Development Agency (NEDA) took over the project, and then the situation further deteriorated. In 1989 AHEC was given Rs 50,000 to reactivate the complex, but the repaired system was not restarted because the villagers had stopped supplying material for the biogas plant. Gautam Singh of the village explains "We stopped providing the "gobar" because first, the gas supply was unreliable and inadequate; second, food cooked on the gas had an unpleasant taste, and third, whenever we could not supply the required amount of gobar, we had to pay for the shortfall - which was bad business."

Later NEDA bought gobar from neighbouring villages and supplied gas to about 12 users in the village. The authorities, apparently irked at the villagers "non-cooperation", removed the solar street lamps and other equipment, including the solar TV set, which was popular in the village.

The district development project director Bhagwat Singh insists on that the project failed because it was set up where it was not wanted: "The project could have yielded better results in a non-electrified village starved of fuelwood and fodder." Apparently the initiators of the project forgot that the participation of beneficiaries is essential for any development project to succeed.

Meanwhile the project has been handed over to the Governmental polytechnic in Roorkee, and is given an additional Rs. 50,000 for restoration. The village have asked to take over the project, even though some villagers warn that unless they are assured of regular technical inputs and are trained to run the complex, the effort may fail again.

Source: Down to Earth, Sept.15, 1993 (article by S.Kumar, Brahampur)

While there have been standstill in Brahampur, thousands of biogas plants have been sucessfully completed in India. Photo: AFPRO, New Delhi.

World Coal Use Levels Off

After four decades of nearly uninterrupted growth, the world coal consumption is no longer growing. From 1990 to 1991 it fell 1.4% and the preliminary data for 1992 show another 0.3% reduction. Economic contraction in Eastern Europe and a modest, worldwide recession are the primary reasons for the drop.

Coal use is falling quickly in the former Soviet Union. It dropped 18% from '88 to '91 and further declines are likely as inefficient coal-fueled factories are closed down and replaced with more efficient plants, mainly fueled by natural gas.

Now the largest consumer of coal is China, that gets 75% of its (commercial) energy from coal. It has plans for a 40% increase in coal use within 8 years. However, extensive lung and crop damage, tied to the country's heavy dependance on coal, are threatening these plans.

INforSE - Europe bylaws under preparation

Based on a decision from the last regional meeting, the INforSE coordinators are now working on the first draft of the INforSE Europe bylaws. This is done in order to register INforSE as a legal body. The draft, that sums up the decisions of the first two regional meetings, will be sent for comments to all European INforSE organizations in December. A second draft will then be sent for comments in February '94, and hopefully a final version can be sent for approval in March '94.

INforSE Campaign in Europe

In Europe the INforSE campaign "Sustainable Energy and Social Development" will be organized in cooperation with BUND (Friends of the Earth - Germany) and Climate Network Europe. It will focus on the grave unemployment problems of Europe, and will explore the possibilities for transferring "passive" funds as unemployment wages into "active" investments into job creation in sustainable energy development. For the campaign INforSE Europe hopes to collect as much information as possible from NGOs on the links between sustainable energy and job creation. Proposals are welcome.

NGO Demands for CO2/Energy Tax

Climate Network Europe and a large number of national NGOs try to persuade the EC leaders to finally agree on a common CO2/energy tax minimum combined with a common EC ratification of the Climate Convention. The issue has been discussed among EC Ministers of Energy, Environment and Finance without result. The issue is still on the EC-ministers agenda for coming negotiations.

Further information: Climate Network, 44 rue de Taciturne, 1040 Bruxelles, ph -32-2-231 01 80, fax -32-2-230 57 13, email gn.canron

European Energy and Environment Park in Leipzig Region

Under this title is running a non-profit project for developing market-oriented solutions for a better environment and higher energy efficiency. The project is formed as a cooperation between municipalities in the area, the district of Leipzig and private companies and company organizations. A main priority of the project is to work with local manufacturers to create jobs locally.

One of the main activities of the project is in the village of Lütschena (3000 inhabitants) that has been chosen as a model village for CO2-reductions. Here energy audits are carried out to identify all cost-effective energy savings. The results of this will be used for a computer-program for quick assessment of energy saving potentials in Eastern German buildings.

The project also promotes solar systems for hot water, as well as straw and wood-chip boilers.


VAT Revenue for Energy Savings

United Kingdom has finally decided to put VAT (Value Added Tax) on energy. During the VAT discussions Neighbourhood Energy Action (NEA) launched a campaign for returning 100 mill. £ of the revenue to the poorer consumers in the form of energy efficiency programs. This could for instance be done through NEA's own Home Energy efficiency Scheme.

When the state budget was published, November 30, it showed that the government has decided to use 35 mill.£ of the VAT revenue for energy efficiency measures for the poorest consumers. While this is less than NEA demanded the decision will lead to a doubling of the public funding for these programs. Of the total VAT revenue 40% will be returned to social welfare and energy efficiency support programs for the poorest consumers.

Further information: NEA, St. Andrews House, 90-92 Pilgrim Street, Newcastle upon Tyne, NE1 6SG, ph -91-261 5677, fax -91-261 6496.

Environmentally Clean Energetics (GNTPR)

Under this title the Russian Ministry of Science and Technical Development is carrying out a research program for renewable energy and other "new" energy technologies.

One of the backgronds for the program is that the capital investments of exploration and development of new oil and gas fields will increase substantially (expected 2-3 times in constant prices), because the most efficient fields are quickly depleting.

The program states that the "country's economy is possible only on the base of the nuclear energy and coal", and the major parts of the program are also devoted to "clean coal" and "safe nuclear energy".

Participation in the projects is open for foreign companies and organizations.

The Program includes projects in seven main directions: safe nuclear power, clean (coal) thermal power, nontraditional energetics (renewables), fuel of the future (gas, peat a.o.), radioactive waste, hydrogen technology and coal-water technology. The scope of each project is generally 3 or 6 years except the nuclear power projects, which are for 10 years during 1990-2000. Half of the R&D cost is planned to be covered by the Program budget.


| "Safe" nuclear plant | 246 |
| "Clean" coal power plant | 70 |
| Renewable energy technologies | 55 |
| Gas, peat, coal gasification a.o. | 22 |
| Hydrogen fuel | 15 |
| Coal-water fuel technology | 31 |
| Total "Clean Energetics" | 439 |

Budget for 1992 in millions of rubles.

By Marc Groves-Raines, Ecogen, UK

The British Government announced in October new contracts for renewable energy projects in England, Wales, Scotland and Northern Ireland. Although the announcement has been significantly delayed, the likelihood is that all the orders will be oversubscribed (particularly wind energy) as more and more companies are interested in developing renewables. The orders are expected to be for approximately 300-400 MW (Declared Net Capacity). The orders will include separate “bands” for wind power, hydro, landfill gas, municipal and industrial waste, energy crops and agricultural and industrial wastes. With the future in mind, the Minister for Energy has also mentioned the possibility of a fourth and fifth order in 1995, to come into effect in 1996, and in 1997, to come into effect in 1998; these orders may not, however, necessarily cover the same technology bands. The Government has also indicated that it will work towards 1500 MW (DNC) by the year 2000.

This is the first time that renewable energy projects in Scotland and Northern Ireland (the windiest parts of the country) have been able to tender for contracts. Projects will be awarded 15 years contracts at prices which are yet to be determined but which will enable capital costs to be paid over the contract period.

* Declared Net Capacity takes account of the actual output from a renewable energy scheme. For instance, a wind farm, due to fluctuation in wind speeds, does not operate at full capacity all the time - a turbine with a name plate capacity of, say, 100 kW is equivalent to about 43 kW Declared Net Capacity.

NGO Roundtable on CO2/Energy Tax

An NGO-proposal for an international CO2/energy tax minimum is now being prepared by an NGO Roundtable of Western European NGOs. The result will be a proposal for EC or for a group of “progressive countries”, defined as Holland, Germany, Switzerland, Denmark and Sweden. The proposal will follow the EC-Commission’s proposal of a 10$/barrel tax + current EC-minimum energy taxation + VAT. It will follow this proposal with a 50/50 division between CO2 and energy tax for carbon fuels; but will demand full tax on nuclear energy and total exemption for local renewable energy sources.

The proposal will be used by the participating NGOs as a demand for the first step of environmental taxation on energy.

Brazilian NGO Energy Roundtable

During the Brazilian Energy Conference 1993 in Rio de Janeiro an NGO energy roundtable was held on October 22. About 30 persons attended the meeting, they were mainly NGO representatives. During the roundtable the following was presented:

- criticism of the Brazilian nuclear energy policy
- the need for increasing support to the development of new and renewable energy sources in Brazil
- information on INforSE

The creation of a Brazilian INforSE Network was discussed. As the main result a number of Brazilian NGOs want to participate in INforSE. It was agreed that the launching of INforSE Latin America will take place in April 1994, in Brasilia, during the ELAN/FLEA network meeting. This meeting will be organized by IED (INforSE coordinating organization in Brazil) and ABRASCA (organizer of ELAN/FLEA meeting).

Meeting and Action Plan for INforSE Latin America

The proposed activities for INforSE Latin America are:

- to prepare and hold a regional workshop of Latin America. The workshop will be held in April 1994, preparations will take place December - March. The participation of a limited number of INforSE representatives will be supported by INforSE.

- to hold national/subregional workshops for establishment of the formal constitution of national/subregional networks, for discussion and approval of national/subregional sustainable energy strategies, and for design of NGO training programmes and public outreach programmes.

The proposed objectives for INforSE Latin America's coming activities are:

- to make a survey of the activities already being undertaken by Latin American NGOs in the energy field
- to prepare a Sustainable Energy Development Strategy for Latin America
- to increase the capacity of the Latin American NGOs for developing sustainable energy development programmes and projects and for disseminating sustainable energy technologies
- to create public awareness of key energy/environment/development issues.

(Based on proposal from Emilio & Ana Lucia La Rovere, IED, Rio de Janeiro, Brazil)

Regional News - North America

Sun Day 1994

The Sun Day Campaign 1994, with more than 50 local events planned for April 24, is interested in contacts to groups and organizations that will make their own activities on April 24 or that will join the already planned activities (mainly in USA).

Further information: Sun Day Campaign, att. Ken Bossong, 315 Circle Avenue #2, Takoma Park, Maryland 20912, ph & fax -1-301-270 2258.

Last Nuclear Battle in USA?

While private U.S. power utilities have stopped investment in new nuclear plants, there is still one utility in USA which is planning new nuclear capacity: The federally owned “Tennessee Valley Authority” (TVA).

50 years ago, TVA brought the gift of electricity to countless small rural communities in Tennessee Valley. Today its policy of stimulating demand and its obsession with capacity building has brought the Federal Administration's great experiment to its knees. A total of 17 nuclear power plants were originally on the TVA's drawing boards. To date, five of these plants have actually been completed. However, all five power plants have been plagued by safety violations, shutdowns and more than a million dollars in Nuclear Regulatory Commission fines. Today four new plants are under construction and two of the previously shut down plants are undergoing extensive repairs to be brought back on line. The price for this nuclear experiment? A growing debt for TVA of 25 billion $, currently.

In spite of TVA’s plans for nuclear power plants the company has so much excess electric generation capacity already, that it does not need a construction program at all. If TVA is allowed to continue to build nuclear power plants, the escalating costs from these unnecessary plants will raise electricity prices sky-high in the Tennessee Valley with adverse economic effects for the whole area. In the end the federal government may have to bail out TVA, increasing the national debt.

The continuing of TVA’s nuclear program is dependant on the Federal Government. TVA is governed by a three-person Board of Directors appointed by the President. There is no public utility commission empowered to oversee TVA. In the Reagan period its previous conservation program was slashed and it started the completion of its remaining incomplete nuclear reactors. The work on these reactors is still going on.

To change the course of TVA, the Environmental Action Foundation, the Tennessee Valley Energy Reform Coalition (TVERC) and other groups have joined forces in a campaign to convince the Clinton Administration to halt TVA’s nuclear program.

Information: Environmental Action, att. Margaret Morgan-Hubbard, 6930 Carroll Ave. 6th Floor, Takoma Park, Maryland 20912, USA, ph-1-301-891-1100, fax-1-301-891-8910
A New Nuclear Power Plant in Brazil?

By Emilio Lebre La Rovere, IED - Institute for Ecology and Development, Brazil

The recent decision of the Brazilian Government to invest in the completion of a second nuclear power reactor is raising controversy in the country.

The technical and economic performance record of Angra I, the first commercial plant built at the site of Angra dos Reis (on the seashore between Rio de Janeiro and Sao Paulo), is very poor. Its operation has repeatedly been stopped due to technical problems. The average load factor of the reactor during its nine years of operation barely reaches 24 per cent. A recent radioactive leakage of nuclear fuel elements will demand expensive repair, adding to an already too costly investment of US$ 3.5 billion for 657 MW of installed capacity (more than the double of the hydropower marginal cost).

FURNAS, the utility in charge of the construction of Angra II, the second nuclear reactor at the same site, alleges that this project is much better than the first one. It will be the first 1300 MW reactor built under the agreement of eight such plants signed with Germany in 1975. But the construction of Angra II alone lasts for more than 15 years now, being constantly delayed because of technical difficulties and mainly due to the lack of financial resources.

Paradoxically, this is also the main case for its conclusion according to FURNAS who claims that US$ 4.7 billion have already been invested in the plant and US$ 1.4 billion will be enough to finish it. Even assuming this the final economical result will not be very bright. But now it is argued that with "only" US$ 1.4 billion remaining to be invested, the marginal cost of completing the plant is cheaper than any other power generation alternative.

The German partners have recently decided to supply additional loans to assist the completion of the plant, which turned to be the crucial factor behind the Brazilian Government decision of pursuing its construction.

However, US$ 578 million still have to be invested by FURNAS, and it will not be easy to get the needed financial resources to conclude Angra II without further delays.

Moreover, the official figures of investments needed to finish the construction of the plant can well be underestimated. A recent report by Greenpeace shows that different governmental sources have continuously underestimated the cost, which was first announced to be US$ 1.5 billion, until reaching the present figure of US$ 6 billion (in constant US$ of 1992).

Besides its doubtful economic attractiveness, the Angra II project also suffers from the old shortcomings of nuclear fission reactors, aggravated in the Brazilian case: the hazardous nuclear wastes generated by Angra I are kept for the moment in a pool next to the reactor, waiting for a satisfactory disposal technology which is still not available.

Within this context, Brazilian ecologists are demanding the elaboration of an environmental impact assessment study of the project which should include a comparison with alternative possibilities of power generation, e.g. the natural gas resources available offshore. A similar solution was given to Midland nuclear plant in the USA which was converted to use natural gas when its construction was at about the same stage as Angra II (70 per cent done).

On the other hand the nuclear lobby is trying to push through the immediate signature of the loan contract with the German funding institutions to prevent any possibility of stopping the construction of the nuclear reactor.

NGO-Cooperation Needed

This case provides a good opportunity of engaging a concrete debate within INforSE, as the German responsibility in the matter can not be denied. A joint initiative of Brazilian and German members of INforSE could strengthen the possibilities of a wider democratic discussion prior to the making of a final decision about this project.

(shortened by the editors)

Boycott of Siemens

More than 70 organizations in Germany and Austria are asking the German and Austrian consumers to boycott all Siemens products until the company withdraws from its nuclear activities. Siemens has a central role in German nuclear technology, and in the German attempts to export nuclear technology to East and South.

More information: Koordinationskreis Siemens-Kampagne, Postfach 610285, 10924 Berlin, Germany, fax 2291822.
PV-Wind Electric Hybrid System

for Stand Alone Application

By Lars Yde, Folkecenter for Renewable Energy, Denmark

It is an old cliché that solar and wind energy are complementing each other well under the Danish seasonal conditions.

In winter, when there is much wind, room heating is needed while in summer with much sun domestic hot water is needed.

A closer analysis will show, however that a wind turbine, which can cover the heat demand in winter easily, can cover the demand for domestic hot water in summer. In addition to that it will be economically more advantageous to use the electricity produced by the wind turbine for electric purposes instead of for heat because electricity has approx. the double value per kWh.

The combination of solar-wind is more interesting in the so-called off-grid electricity systems. These are self-supplying plants which are not coupled to the public electricity grid.

A photo-voltaic plant has a relatively high production in summer and a relatively small production in winter. This means that an off-grid system will either result in a heavy over-production in summer or should be equipped with a seasonal storage. Both solutions will be very expensive (See fig. 1). A windpower supply has serious problems in summer when periods with no wind may occur up to 2 weeks (see fig. 2). The combination of solar-wind is therefore evident (see fig. 3).

The question is, what the proportion between the solar and wind plant should be? Can the hybrid plant compete with a pure solar or wind plant?

Design considerations for Danish climate

A photo-voltaic plant has a production per month varying between 18% in January and 100% in July (see fig. 1). The windpower plant produces 55% in July and 100% in January (see fig. 2).

Now we shall compare 3 different plants giving the same annual production. The key figures for 1 m² plant is stated in the table above. That is 1 m² solar cell panel and 1 m² swept area for the wind turbine which is a PC4000 (1.5 kW, Ø 4 m wind turbine, 12 m tower).

Mean wind speed = 4 m/s.

The following three plants are compared:

- The 1st plant is a pure photo-voltaic plant with a battery storage capacity of 6 months (Fig. 1).
- The 2nd plant is a pure windpower plant with a battery storage capacity of 2 weeks (Fig. 2).
- The 3rd plant is a hybrid plant with battery storage capacity of 2 days (Fig. 3).

For an annual production of 300 kWh the following plant sizes are needed:

1) 3 m² photo-voltaic plant
2) 1.5 m² windpower plant
3) 1 m² photo-voltaic plant + 1 m² windpower plant

An annual production / consumption of 300 kWh evenly distribution throughout the year corresponds to approx. 0.8 kWh per day. Therefore the 3 plants need the following storage capacities:

1) 6 months == 144.0 kWh
2) 2 weeks == 11.2 "
3) 2 days == 1.6 "

The total costs of the plants are calculated with the following prices:

Photo-voltaic plant: 8,000 DKK/m²
Windturbine: 3,600 DKK/m²
Battery storage: 1,500 DKK/kWh

These figures are based on plants of a...
The total costs of the plants are:

1) $3 \times 8,000 + 144 \times 1,500 = 234,000$ DKK

2) $1.5 \times 3,600 + 11.2 \times 1,500 = 22,200$ DKK

3) $1 \times 8,000 + 1 \times 3,600 + 1.6 \times 1,500 = 13,700$ DKK

The numbers show that the cost of the 1st and 2nd plant are dominated by the prices of the battery storage, while the cost of the 3rd plant is dominated by the wind turbine and the photo-voltaic plant.

If we take a look on the operation expenditures the advantage of the hybrid plant is getting even more evident.

A battery storage has a limited lifetime. For instance, 2,000 cycles for 50% discharging for stationary battery. A battery of 1 kWh will therefore have a life capacity, (lifetime) of 2,000x0.50x1 kWh = 1,000 kWh. After 2,000 cycles the battery will still function but at reduced capacity.

The price for the battery is, as mentioned above, approx. 1,500 DKK which gives a storage price of approx. 1.50 DKK per kWh. Therefore it is quite evident that storage of electricity is something that, as far as it is possible, has to be avoided. This is done best by letting the wind and the sun work together.

**Large Development Potentials**

Stand-alone operation of small plants as a real energy supply is a field which is neither especially developed nor immediately comparable with other electricity supplying units. Such a plant has a long row of applications such as:

- Self - supplying of grid independent buildings in industrialized countries.
- House / farm / village - plant in remote areas, in 3rd world countries and at refugee camps.
- Electric water pumping and ordinary electricity supplying.

So there are great potentials for development.

One of the obstacles of spreading the utilization of stand-alone solar cell plants is the large demand for storage due to the solar cells being in operation in day hours only and, except for the countries around the Equator, it gives full output in the summer months only.

In Denmark the operation of wind power is spread over the whole day, and the greatest output is in the winter. In the countries near the Equator the wind power is either fairly evenly distributed over the whole day or peaks at sunrise and sunset.

In any case, co-operation between photo-voltaic and wind power will extend the operation time of the plant over the day and over the year. By this a levelling of the output of the plant will take place by means of which the storage demand is reduced considerably.

Therefore it can be expected that a photo-voltaic/wind power plant will be a favourable type of plant. The development and experience that have already been achieved with stand-alone operation of small wind turbines make a good basis for a contribution in this field.

![Fig. 2](image1)
![Fig. 3](image2)
![Fig. 4](image3)
Events

January 15-16, 1994
Regional INForSE meeting for Eastern and Southern Africa, Nairobi, Kenya
Info: Mumbua Munywoki, FWD, P.O.Box 30979, Nairobi, Kenya. Ph: +254-2-560632, fax: +254-2-740524

January 20, 1994
20th Anniversary Conference - UK-ISES, London
Technical conference on renewable energy.
Info: Jennie Gregory, Ph: +44-736-730073, Fax: +44-736-730820.

February 21-25, 1994
Regional INForSE meeting for Western Africa, Palmarin, Senegal
Info: ENDA - Energie, att. Masse Lo & Youba Sokona, B.P.3370, Dakar, Senegal, Ph: +221-22 9583/2496, Fax: +221-22 2695, Telex 51 456 ENDA TM SG, Email: energy@endadakar.gn.apc.org

February 22-25, 1994
Regional INForSE meeting for Asia Pacific, Hanoi, Vietnam
Together with Conference on Sustainable Energy Development and Exhibition of Renewable Energy Products from the Asia Pacific Region.
Info: Benjamin Gertes, PCATT, 224 D Silang Street, Batangas City, Philippines 4200. Ph: +63-43 723 1155, Fax: +63-2-815 0276 (c/o Daqna).

March 9-10, 1994
Electricity in Europe '94: The Increasingly Competitive European Electricity Market, London, UK.
Conference. Info: International Centre for Business Information Ltd, 2nd Floor, Market Towers, 1 Nine Elms Lane, London SW8 5NQ, UK, Ph: +44-71-344 3830, Fax: +44-71-344 3860

April, 1994
Regional INForSE meeting for Latin America, Brasilia, Brazil
Together with workshop and ELAN-network meeting.

April 5-8, 1994
Global Climate Change: Science, Policy and Mitigation Strategies, Arizona, USA
Conference. Info: Dr. C.V. Mathai, Arizona Public Service Company, P.O.Box 53999, M/S 9366, Phoenix, AZ 85072, USA. Ph: +1-602-2503569, Fax: +1-602-2508313.

April 11-15, 1994
12th European Photovoltaic Solar Energy Conference and Exhibition, Amsterdam, the Netherlands.

April 24, 1994
Sun Day 1994, USA
Coordinated campaign with more than 50 events in USA.

April/May 1994
Regional INForSE Meeting for Central Asia, New Delhi, India
Together with Workshop to Promote Sustainable Renewable Energy Programs through NGOs.

April 20 - May 6
NGO Islands Forum, Barbados
Parallel with UN-conference on small islands sustainable development. Theme on appropriate technology, exhibition on renewable energy.
Info: Barbados Env. Association, P.O. Box 132, Bridgetown, Barbados, W.I., Fax: 809-427 0619.

June 2-5, 1994
Towards the world governing of the environment, Venice, Italy
Info: ICEF Mr. A. Postiglione, Corte Suprema di Cassazione, Piazza Cavo- ur 1, 00193 Rome Italy. Ph: +39-6-6868597, Fax: +39-6-68300783.

June 21-25, 1994
Energy Visions, Basel, Switzerland

July 4-8, 1994
European NGO Energy Seminar, Deister, Germany

July 9, 1994
Regional INForSE Meeting for Europe, Deister, Germany
Info: Gunnar Boye Olesen, OVE, Wil­lemoesgade 14, 2100 Copenhagen Ø. Ph: +45-3142 9091, Fax: +45-3142 9095, E-mail: ove@pns.apc.org.

September 11-16, 1994
World Renewable Energy Congress, jointly with ISES Europe, Reading, UK.
Climate Change - Energy and Environment.
Info: Prof. Sayigh, University of Reading, Dept. of Engineering, Ph: +44-734-318588, Fax: +44-734-318335.

September 22-23, 1994
Asia Energy Efficiency Conference with parallel exhibition ENEX-Asia '94, Singapore

October 1-5, 1994
Parallel activities to IMF/World Bank meeting, Madrid, Spain

October 24-27, 1994
Third International Conference on Power Quality: End-Use Applications and Perspectives, Amsterdam, The Netherlands
Info: mr Teus de Jong, KEMA Trans­mission & Distribution, P.O.Box 9035 ET ARNHEM. The Netherlands, Ph: +31-85-566093, Fax: +31-85-513683.

November 16-18, 1994
Energy - Innovation - Revolution, Switzerland
5th International Festival of Films on Energy Lusanne.

Sustainable Energy News 14
No. 3, December 1993
Unplugged

By Ann Vikkelsø, OVE: Denmark

La Barthe, a small community in Southern France, has decided to disconnect from the public power grid, in order to avoid using nuclear power.

La Barthe

It is a sunny summer day in the Pyrenees. La Barthe celebrates its summer festival, with local musicians performing, theater and lots of people visiting from the area. But it is not only passive entertainment. They are also promoting their ideas of a sustainable lifestyle to all the visitors. There are guided tours around the farm, demonstration of husbandry (working with animals), and an anti-nuclear - pro renewables and energy efficiency exhibition.

About 10 persons live and work at the farm La Barthe. They are doing organic farming. They are using oxen, mules and horses for most of the heavy physical work (animal husbandry) and have very little machinery at the farm. They are growing vegetables and herbs. The herbs are dried and some of them are used for oils. There is also a bakery at La Barthe.

Renewable Energy

La Barthe gets nearly all its energy from renewable sources. Exceptions are a small share of the electricity that is still delivered from the public grid, and using petrol for the vehicles. They are using wood for heating and for the oven in the bakery. There is a lot of waste wood in the area, so there is no problem with getting enough bio-fuel.

Electricity is produced by a 1 kW wind turbine and two 55 W photovoltaic panels. The electricity is stored in a battery storage, ideally with a capacity of 10 kWh (800Ah*12V), but presently lower. The current storage capacity is too low to enable the community to disconnect from the public power grid yet.

For drying of the herbs there is built a simple air solar collector outside the drying house. Air is heated in the solar collector and blown directly into the drying boxes.

The Pyrenees is good for the combination of wind and solar energy or electricity production. Its a mountain area with an average windspeed of 4-5 m/s. There are no longer periods without wind and the area is sunny.

Books

Wind Power for Home & Business
This is a new book from one of the "grand old men" in windpower in USA. It tells "all you need to know" if you want to install a small- or medium sized wind turbine in USA. Also a valuable book outside USA. Contains description of technology, applications, siting, how to buy or build, connection to utility, installation, maintenance. Include lists of manufacturers & contacts, plus a worldwide overview of wind resources.
Poul Gipe, Chelsea Green Publishing Company, P.O. Box 130, Route 113, Post Mills, Vermont 05058-0130, USA, 413 pages, 35 £

Where the Wind Blows.
Wind energy, Windfarms. 24 pages, 3.50 £, 1993

Solar Water Heating - A DIY Guide
24 pages, £ 3.95, 1993

No Public

75% of French electricity is produced at nuclear power plants. The French energy system is very centralized, all is owned by Electricite de France. It is not possible for any independent energy producers, as wind turbine cooperatives or small cogeneration plants to get connected and sell electricity through the public grid at any reasonable price. In order not to use nuclear power, the only choice the individual consumer has, is to get disconnected from the grid and build up a stand alone system, just as La Barthe is now doing.

16 pages, £ 1.95, 1993

Save Energy Save Money - A Guide to Energy Conservation in the Home
32 pages, £ 2.95, 1993

Four new English books with overviews of major renewable energy technologies, that we all can use.
Centre for Alternative Technology Publications, Macynlilieth, Powys, SY20 9AZ, UK, ph -44-654 702400, fax -44-654 702782
Join the INforSE Campaign on Sustainable Energy and Social Development

By Gunnar Boye Olesen, INforSE

At the INforSE coordinating meeting in Denmark in October '93 the participants supported the launching of an INforSE campaign "Sustainable Energy and Social Development". It was agreed that the campaign should include as many regions as possible. Major issues will be energy and job creation, income-generation and social development. The campaign will consist of regional activities and general activities including input to the World Summit on Social Development '95.

Present Plans

The presently planned campaign activities are:

- regional studies on sustainable energy and social development. The studies will describe the specific conditions, experience and priorities of each region, as well as political priorities from NGOs. Currently a study of the Danish/European situation is undertaken by Aalborg University Center, Denmark. Forum for Energy & Development will seek funding for studies in developing countries. The regional INforSE coordinators will play central roles in the developments of the regional studies.
- an international campaign paper highlighting sustainable energy perspectives, success-stories and proposed policies. The paper will be based on the regional studies and will be elaborated in April-July 1994.
- International Workshop (see below)
- regional campaign activities following the workshop
- coordinated input to the World Summit on Social Development, Copenhagen, March 1995.

International Workshop

The major coordination of the campaign will be made at the "International workshop for Sustainable Energy and Social Development", which is planned to be one week in August 1994, in Denmark. The workshop will be a forum for exchange of experiences and for the development of inputs to the World Summit '95. It will give room for in-depth discussions of the nexus between social development and sustainable energy. During the workshop an action plan will be elaborated for the following campaign activities.

The participants will be representatives of INforSE organizations active in the campaign and other organizations and individuals with proven experience related to a sustainable, decentralized energy development.

Invitation to Join the Campaign

All NGOs working for a sustainable energy development are invited to join the campaign by giving their inputs to the regional strategies and/or take part in the campaign activities. More and more NGOs are working on the links between sustainable development and job/livelihood creation. This campaign will join the forces of many NGOs that are exploring these links in theory and in practice in their campaigns.

If your NGO wants to join the campaign please inform your regional coordinator or the INforSE secretariat in Denmark, that will pass the letter to the coordinator. Express your interests, plans and current activities regarding the campaign-issue. Inputs to the regional studies are also mostly welcome.