

**Sustainable Energy News**  
**Newsletter for International Network for Sustainable Energy,**  
**No. 17,**  
**May 1997**

**Sustainable Energy News**  
**ISSN 0908 - 4134**  
**Published by: INFORSE**

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**International Network for Sustainable Energy (INFORSE)** is a worldwide NGO network formed at the Global Forum in Rio de Janeiro, Brazil, June 1992.

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**Deadline for next issue:** 25.07.97  
**Next issue:** September 1997

The newsletter is quarterly.  
Feel free to use the information in the newsletter,  
but please state the source.

**Annual subscription rate:**  
DKK 100 (approx.US\$ 20),  
plus bank cost at check & transfer DKK 50 (approx.US\$ 10).

The newsletter is free of charge to NGOs as long as possible.

**Sustainable Energy News is sponsored by:** Forum for Energy and Development, Denmark.

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Editorial

## **5 Years after Rio - is Energy Back on the Agenda?**

By Rene Karottki INFORSE Secretary

Looking back at the Rio-conference in 1992, it is remarkable how little attention was given to energy and development, in stark contrast to the importance of energy consumption. All human activities are based on consumption of energy, and this is a major reason for environmental degradation and resource depletion. Energy consumption is very unequally distributed, with 80% of the resources consumed by 20% of the population, mainly living in industrialised countries.

This calls for a special effort at the UN General Assembly Special Session (UNGASS) on the follow-up of Rio, which will take place in June 1997. It seems that several international agencies, such as the UNDP and the EU, have noted this, and will attempt to put energy on the UNGASS agenda. During the recent meeting of the Commission for Sustainable Development (CSD), the Danish Government proposed the establishment of an Energy Panel, similar to the Forest Panel.

It is necessary to increase the attention given to energy issues in the coming years, but it is even more necessary to look into how this is done.

Drastic reduction of energy consumption in industrialised countries is crucial to resource conservation and to minimize global warming.

It is crucial to maintain the link between energy and development. We must see energy in its social context, bearing in mind that at least 2.5 billion people have no regular and sustainable access to energy.

And it is crucial to see energy as a cross-sectorial issue. We must look critically into energy consumption in agriculture, housing, industries, transport, health, education, and other sectors.

To look across sectors is to look directly into the daily lives of people and of their communities. This is why involvement of people is necessary to the solution of any environmental problem, including the sustainable consumption and supply of energy. Energy development should be based on community participation. It should not be left to the traditional top-down decision-making process. We know from practical experience all over the world that this is needed, and that it is possible. During UNGASS, it should be the role of NGOs to bring this message across to the decision-makers, and to ensure that the energy activities after UNGASS are not left solely in the hands of traditional energy-sector actors.

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INFORSE/World

## **Main Outcomes from the RIO + 5 Meeting**

By Emilio Lèbre La Rovere, Latin America INFORSE Co-ordinator

Roughly 500 people met in the city of Rio de Janeiro on March 13-19, 1997 to evaluate the progress achieved towards

sustainability in the 5 years since the Earth Summit held in 1992 (UNCED - RIO 1992). Most of them were representatives of NGOs, but also members of local and national official Sustainable Development Councils as well as selected international and business organisations were invited by the Earth Council, which co-ordinated the event under the chairmanship of Maurice Strong.

A number of parallel events were organised by different institutions, including the Brazilian Ministry of Environment, the E7 group (composed by 8 large utilities from OECD countries), and the University of Rio de Janeiro (the Energy Planning Program of the university held scientific meetings on issues such as Climate Change and the Brazilian Ethanol Program).

The events drew good coverage from the press. The Brazilian president, Dr. Fernando Henrique Cardoso, delivered a speech on the general balance of Brazilian government actions in the field of environment, drawing considerable attention to the event. However, impact in the media was somewhat lessened by the failure to reach a consensus about the final document of the meeting. As the draft statement prepared beforehand by the Earth Council was considered too "soft", at the end of the meeting, a working group was assigned to deliver a final document within ten days.

The widespread feeling during RIO+5 was that the progress achieved towards sustainability in these five years has been too slow.

The major outcome of the meeting was a number of recommendations for actions and commitments, which will be sent to the special session of the United Nations General Assembly, June 23-27, 1996. The purpose of this session is to review the progress towards sustainability.

#### Energy Recommendations

The RIO+5 Summary includes the following points related to the energy field:

We call upon governments for the following commitments:

- Endorse a legally binding CO2 reduction target of 20% from 1990 levels by the year 2005, and commensurate reductions of other greenhouse gases, to be adopted in Kyoto in December, 1997.
- Develop and promote sustainable energy policies that reflect the true costs of fossil fuels; substantially increase funding for energy conservation, renewable energy, and energy efficiency programs; and phase out nuclear power.

#### INFORSE Participation

INFORSE was represented at RIO+5 by Emilio L. La Rovere (Latin America co-ordinator) and Youba Sokona (Western Africa co-ordinator). In the session devoted to the discussion of energy issues, two reports were presented:

- "Energy After Rio: Prospects and Challenges" from UNDP, by Thomas Johansson & A.K. Reddy;
- "Is Energy Contributing to Sustain-able Development?" from the Global Energy Observatory (GEO), by Helene Connor & Emilio La Rovere.

In the latter, INFORSE was involved through the contribution of

Emilio La Rovere and Youba Sokona in the development of a methodology of assessment, monitoring, and reporting, and in evaluating progress in Africa and Latin America. The Report was a preliminary result of the GEO project aimed at establishing a permanent monitoring of the progress towards sustainable energy development.

INFORSE members are invited to participate in GEO's work (see SEN 16, p. 3).

For information and report of GEO, contact GEO, att. Helene Connor, 56 Rue de Passy, 75016 Paris, France.  
Ph:+33-1-42245148, fax : +33-1-42248633,  
e-mail: helio@globenet.org.

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### **South-South Workshop on Biogas**

INFORSE is now planning an international workshop on household biogas plants in India with the aim of increasing south-south co-operation on this important technology.

At the workshop, a number of critical factors for dissemination of biogas plants will be addressed including rural energy need and supply, biogas design and technology transfer, and financing, as well as adaptation to different cultural, social, technical, and climatic conditions. The workshop will be supplemented with field visits to innovative biogas plants and to NGOs active in biogas construction.

The participants of the workshop will include members of the biogas resource base and will be selected in co-operation with national INFORSE member organisations.

Among the expected outcomes of the conference is the creation of a basis for future co-operation between institutions and NGOs active in biogas development in a number of Asian and African countries.

If the planning and fundraising proceeds successfully, the workshop will be organised in November, 1997.

Further information: INFORSE Secretariat (see p.2) or INFORSE Central Asia, INSEDA, 3rd floor, St. Soldier Tower, Vikas Puri, New Delhi 110018, India. Ph: +91-11-5510344, fax: +91-11-5529646 .

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### **From Habitat to Practice**

Demonstration projects proposed

After the Habitat II Conference in 1996, the Forum for Energy and Development, a Danish NGO umbrella organisation, started a follow-up to transform the recommendations of the conference for sustainable development into practical work for sustainable housing. As part of this follow-up, a workshop was held in April '97 in Denmark, bringing together NGOs, research institutions, and public administration representatives from South Africa, Mozambique, Tanzania, Thailand, Vietnam, and

Denmark.

The recommendation from the workshop was to increase co-operation on integration of energy and environmental solutions in housing, as well as on the organisation of social housing. The participants stressed the need for north-south as well as south-south co-operation.

Now the co-operation will continue with development of demonstration projects and tools for exchange of experience and information in sustainable housing. One of the proposals is to create a "Green City", demonstrating sustainable housing in Midrand, South Africa.

More information: Forum for Energy and Development,  
Landgreven 7, 1301 Copenhagen K, Denmark,  
ph:+45-33121307, fax: +45-33121308.

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Adult Education

### **CONFINTEA V & INFORSE, July 1997**

Together with UNESCO and the International Council for Adult Education (ICAE), INFORSE is now preparing the environmental theme for UNESCO's 5th World Conference on Adult Education, CONFINTEA V, in Hamburg, Germany on July 14-18, 1997.

For INFORSE, adult education and learning are important tools in sustainable development. Many NGOs perform adult education when they work in communities and in campaigning. During CONFINTEA, some of these practical experiences will be represented via the participation of 7 NGOs from all continents, funded by a grant to INFORSE from the Government of Denmark. In Hamburg, these NGOs will be matched with organisations working in adult education, and possibilities for future collaborative activities will be explored.

Another objective of INFORSE-participation will be to ensure that the two CONFINTEA documents, the "Declaration" and the "Agenda for the Future", will strengthen the role of environment and adult education in future governmental policies.

At CONFINTEA, INFORSE and ICAE will organise a workshop on adult education and environment, a poster exhibition, and some special events, such as the on-site construction of an improved mud stove. A jointly produced booklet from INFORSE and ICAE will address the issues on adult education and environment, presenting specific cases as well as visions for the future.

More information: INFORSE Secretariat (address on p.2).

Sustainable Development on the  
"Agenda for the Future" of CONFINTEA V

One of the main outcomes of the CONFINTEA V will be an "Agenda for the Future" for adult education. In the draft text of January '97, the Agenda recognises environment and sustainable

development together with health and population issues as one of the 10 themes for adult education for the 21st century. Within the 22 pages of the draft Agenda are these two of its many guiding principles:

- The public has to be informed to be able to insist on formulation of sound public policies concerning the environment;
- People have to understand what is required of them (to reduce environmental problems).

The proposed objective to achieve this is to "*Promote the competence and involvement of civil society in dealing with environment and development problems*". Proposed actions include:

- Non-formal adult education to increase people's capacity to initiate and develop programmes on sustainable development;
- Adult education to sensitise communities and decision-makers to environmental and developmental issues; in particular, to the need for changes in production and consumption patterns in developed countries.

Further, it is proposed that innovative adult education be developed in collaboration among the public and the private sectors and NGOs, and that environmental and developmental issues be integrated into all sectors of adult education.

Among the 10 themes, the most outstanding is to use adult education to help build democracy and to create greater community participation in this process. Among the other themes are promotion of the empowerment of women and meeting the special needs of groups that are poorly served in terms of adult education. The Agenda does not address the major inequality between the resources available for people in the south and in the north.

To finance adult education, a number of proposals have been made, including:

- Each development sector (e.g., agriculture, health) should earmark a share of its budget for adult learning;
- Each country should allocate at least 6% of its gross domestic product to education and a share of this for adult education;
- All business enterprises should allocate at least 0.3% of their salary budgets and 0.1% of their total budgets for adult education;
- Debts of the least developed countries be converted into investments in human resource development; and
- Possibilities be explored of import taxes for products from enterprises with inadequate investment in human resources for adult education. The tax should be collected by the importing country and used for adult education in the producing country.

INFORSE Comments

Overall, INFORSE recommends that the Agenda recognises clearly the differences between the pressing needs and appropriate remedies in the north and those in the south, and that the Agenda be divided accordingly. This should be followed by a stronger poverty focus, with clearer commitments towards the poor and the marginalized groups. In line with this, it is proposed that funds be secured for education of the world's poor and marginalized groups.

On the subject of environmental adult education, INFORSE stresses the need for division of roles between actors within the field: government, NGOs, and others. Further, it stresses the need to recognise the role of women in relation to the environment, particularly in the developing countries, where women are important agents in the consumption of natural resources, e.g., via their responsibility to secure fuelwood for cooking and heating.

A new version of the draft Agenda is now being developed by UNESCO for presentation before CONFINTEA V.

More information:

UNESCO Institute for Education, Ph: +49-40-4480410, fax:  
+49-40-4107723, e-mail: uie@unesco.org.

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### **Sustainable Energy Adult Education Review**

This section is the Part Three of the "*Adult Education Review*." It is part of the preparation of INFORSE's work on adult learning and environment in preparation for the UNESCO International Conference. (see article on page no. 4 ).

The Part One and Two of this section appeared in Sustainable Energy News no. 15 and no. 16. In these issues we had advertisements from 6-5 centers. In this May issue, we have one advertisement and we provide a contact list to all of those centers which have a central role in the field and we got information about them. The green colour highlights those centers, which advertised before.

BRTC, Asia-Pacific Regional Biogas Research & Training Centre  
Info: Hu Rongdu.

4 Duan Renming South Street,  
Chengdu Sichuan 610 041, China.  
Ph: +86-28-5553950,  
fax: +86-28-5553756,  
e-mail: obrtc@shell.scsti.ac.cn.

KARADEA, Karagwe Development Association  
Solar training facility. Works with Energy Alternative Africa  
(Kenya).

Info: Oswald Kasaizi.  
P.O. Box 299, Kagera District,  
Karagwe, Tanzania.  
Ph: +255-66-22541,  
fax: +255-66-22531.

Renewable Energy Program  
University of Zimbabwe  
Info: Najwa Ildam.  
Faculty of Engineering, PO Box MP 167,  
Mount Pleasant. Zimbabwe.  
Ph: +263-4-303211,  
fax: +263-4-303280.

Folkecenter for Renewable Energy  
Test and training facilities. INFORSE-member.  
Info: Jane Kruse.  
Kammersgaardsvej 16, Sdr. Ydby,  
7760 Hurup, Thy, Denmark.  
Ph: +45-97-956600, fax: +45-97-956565,  
e-mail: fcenergy@inet.uni-c.dk,  
<http://www.gaia.org/los/folkecentre/>.

ARTEFACT -  
Centre for Appropriate Technology and Development Cooperation  
Test and training facilities. INFORSE-member.  
Info: Werner Kiwitt.  
Postfach 1125, Bremsbergallee 35,  
24960 Glücksburg, Germany.  
Ph: +49-4631-6116-23/-22,  
fax: +49-4631-6116-28.

Carl von Ossietzky Oldenburg University  
Ph.D. and short courses on renewable energy.  
Info: Edu Knagge.  
Department of Physics, P.O. Box 2503,  
26111 Oldenburg, Germany.  
Ph: +49-441-7983544,  
fax: +49-441-7983326,  
e-mail: [edu@ehf.uni-oldenburg.de](mailto:edu@ehf.uni-oldenburg.de).

CEU, Central European University  
MSc. on Environment.  
Info: Diana Vorsatz,  
Dept. of Environmental Science and Policy, Nador u. 9,  
Budapest 1051, Hungary.  
Ph: +36-1-327-3021 or 327-3095,  
fax: +36-1-327-3031,  
e-mail: [vorsatz@ceu.hu](mailto:vorsatz@ceu.hu),  
<http://www.ceu.hu/>.

FAIRE, Free & Applied Internships on Renewables & Efficiency  
Info: Kriszta Szabados. c/o Energy Club,  
PO Box 411, 1519 Budapest, Hungary.  
Ph: +36-1-166-8866,  
fax: +36-1-181-3393,  
e-mail: [kriszta@nuke.zpok.hu](mailto:kriszta@nuke.zpok.hu).

CENSOLAR  
Int. Solar Energy Distance Learning Center. Training in  
Spanish. INFORSE-member.  
Info: Raimundo Gonzalez. Republica Argentina 1,  
41011 Sevilla, Spain.  
Ph: +34-5-4278158,  
fax: +34-5-4280014,  
e-mail: [censolar@censolar.org](mailto:censolar@censolar.org).

CREST, Center for Renewable Energy Systems Technology  
MSc. on renewable energy.

Info: L.L.Freris, Dept. Electronic & Electrical Engineering,  
Loughborough University of Technology, Loughborough,  
Leicestershire LE11 3TU, United Kingdom.

Ph: +44-1509-223466,

fax: +44-1509-610031,

e-mail: L.L.Freris@lboro.ac.uk,

<http://info.lboro.ac.uk/departments/el/research/crest/>.

CAT, Centre for Alternative Technology

Test and training facilities.

Info: Joan Randle. Machynlleth,

Powys SY20 9AZ, Wales, United Kingdom.

Ph: +44-1654-703743,

fax: +44-1654-702782,

<http://www.foe.co.uk/cat>.

Open University, EERU

Renewable energy courses

Info: Godfrey Boyle. Fac. of Technology, Open University,  
Walton Hall, Milton Keynes MK7 6AA, United Kingdom.

Ph: +44-1908-653335,

fax: +44-1908-653774,

e-mail: G.A.Boyle@open.ac.uk,

<http://www.open.ac.uk/student>

Web/t265/.

Energy Group, Department of Engineering,

University of Reading

MSc. and short courses on renewable energy

Info: Anne E. Wheldon, Dept. of Engineering, Whiteknights,  
Reading RG6 2AY, United Kingdom.

Ph: +44-118-931-8756,

fax: +44-118-931-3327,

e-mail: [energy.group@reading.ac.uk](mailto:energy.group@reading.ac.uk),

<http://www.reading.ac.uk/mech/energygp>.

IT Power ltd.

Test and training center

Info: Rolf Oldach. The Warren, Bramshill Road, Eversley,  
Hampshire RG27 0PR, United Kingdom.

Ph: +44-1734 730073,

fax: +44-1734 730820,

e-mail: [itpower@gn.apc.org](mailto:itpower@gn.apc.org).

Federal University PPE/COPPE/UFRJ

MSc. PhD on Energy Planning in Portuguese.

Info: Emilio Lebre la Rovere. C.P. 68565, Rio de Janeiro,  
21945-970, Brazil.

Ph: +55-21-270-9995,

fax: +55-21-290-9662,

e-mail: [emilio@ppe.ufrj.br](mailto:emilio@ppe.ufrj.br).

Woodrow Wilson School of Public & Int. Affairs

Info: Daniel M. Kammen, Prof. Princeton University, Princeton,  
NJ 08544, USA.

Ph: +1-609-258-2758,

fax: +1-609-258-2809,  
e-mail: kammen@phoenix.princeton.edu.

Solar Energy International  
SEI, P.O. Box 715, Carbondale, Colorado 81623, USA.  
ph: +1-970-963-8855,  
fax:+1-970-963-8866  
e-mail: [sei@solarenergy.org](mailto:sei@solarenergy.org)  
<http://www.solarenergy.org/index.html>  
SEI Workshops in 1997:

- Carbondale, Colorado, USA  
Solar Home Design            July 7 - 11  
Solar Cooking                July 11 - 13  
Micro Hydro                  July 14 - 18  
Wind Power                   July 21 - August 1  
PV Design & Installation    August 4 - 15  
Advanced Photovoltaics     August 18 - 29  
Environmental Building      Weekends - September

- Asheville, North Carolina, USA  
PV Design & Installation      October 13 - 18

- Seattle, Washington, USA  
PV Design & Installation      October 20 - 25

- Austin, Texas, USA  
PV Design & Installation      November 10 - 15

Workshops are taught in English. 10% of all yearly participants are from countries other than USA. Average cost is 450 USD per week.

SEI is a non-profit educational organisation to encourage the practical use of renewable energy and environmental building through education and technical assistance.

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Asia

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#### **ADB Loans in India & China**

The Asian Development Bank (ADB) has a number of loans concerning sustainable energy, including:

China:

- \$ 82.8 and \$ 178 million Industrial Energy Conservation and Environmental Improvement Project<%-4>

India:

- \$ 100 million Renewable Energy Development Project

Studies under preparation:

- \$ 597,000 Market-based Energy Conservation and Environment Improvement Study in China.

- \$ 600,000 Demand-Side Management Study in North of China.

- \$ 400,000 Policies to Support the Energy-Saving Construction Materials Industry in China.

- \$ 700,000 Institutional Strengthening of the India Renewable Energy Development Agency Ltd.

The programs include training of appropriate personnel at the related Ministries. ADB plans to increase the local capabilities to conduct full impact assessments of individual projects as well as to manage loan portfolios. NGOs can be engaged.

More information:

ADB, Central PO box 789, Manila 0980, Philippines.

e-mail: [www@mail.asiandevbank.org](mailto:www@mail.asiandevbank.org),

<http://www.asiandevbank.org/>.

Source: CEF (See publication list).

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**Sydney 2000 Solar Olympics?**

Renewable Energy Proposals

Community Groups Involved

"Sydney is committed to the widest possible use of renewable sources of energy" Quote from the Environmental Guidelines for the Olympic Games.

The State Government of New South Wales (NSW), Australia is trying to make the Olympic Games in 2000 a show-piece of the image of "Green Games".

During the planning phase a lot of community groups are being involved and the planners are listening to renewable-energy proposals. Among the plans are:

- 25% energy-reduction target for governmental buildings.  
- 5-MW grid-connected wind farm on a sheep ranch 90 minutes from Sydney.

- "*Solar Olympic Village*" which will be the world largest solar-powered suburb. Photovoltaic cells will make each house operate as a "*clean, green mini-power station*".

The comments and criticisms of Greenpeace and the Green Game Watch 2000 have high publicity in Australia.

Source: Herbert Wildes, ATA - Alternative Technology Association, 247 Flinders Lane, Melbourne 3000, Australia.

Ph: +61-3-96507883, fax +61-3-96508574,

e-mail: [herbw@mail.micronica.com.au](mailto:herbw@mail.micronica.com.au), [ata@ata.org.au](mailto:ata@ata.org.au),

<http://www.ata.org.au/>.

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Africa

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**Energy from Municipal Solid Waste in Africa**

By S. Karekezi, T. Ranja, A. Tibwitta and L. Majoro, AFREPREN / FWD, Kenya - INFORSE Regional Co-ordinator

US\$ 2.5 Million Project in Tanzania to tap the energy from the

waste of Dar es Salaam. The prospects of this technology in Africa depend on the success or failure of this plant.

One of the most promising initiatives in Africa to tap the energy potential of municipal solid waste is a US\$ 2.5 million project financed by the Global Environment Facility (GEF) and located in Dar es Salaam, Tanzania. The project will utilise 23,000 m<sup>3</sup> of methane generated by the process of anaerobic digestion in waste landfills of the country's capital to provide a lucrative fuel from urban waste.

10% of Tanzania's Electricity

Large-scale replication of the pilot project could result in the generation of electricity equivalent to more than 10% of Tanzania's total electricity-generating capacity. Anticipated revenue from the plant is about US\$ 245,350 per year. From the third year onward, the projected annual operating costs drop to US\$ 109,000 from their initial level of US\$ 169,000, and the subsequent expected annual profit increases to US\$ 300,000. The pay-back period is estimated to be 13 years. To some extent, the prospects of this technology in Africa depend on the success or failure of this plant.

NGO Study Finds that Monopoly is a Barrier

A current study by the African Energy Policy Research Network (AFREPREN)/ Foundation for Woodstove Development (FWD) has identified institutional, managerial, financial, and economic factors as the major impediments to the wider adoption and dissemination of the technology. Institutionally, the major obstacle to their implementation includes the "de-facto" or "de-jure" monopoly of national utilities. Questions regarding the legality of generating, distributing, and selling power by institutions other than the national utility hamper wider dissemination of this technology. For instance, the existing Electricity Act (Chapter 134, 1964 Edition) used to give the Uganda Electricity Board (UEB) a near-monopoly on power generation, transmission, and distribution in the country. UEB reserved the right to grant or to reject license to any other party to generate power, be it for own use or for sale to other parties. Even when the national or local utility agrees to purchase power generated by independent producers such as the subject plants, price-setting becomes the sticking point.

Reforms on the Way

In spite of some high-profile and dramatic setbacks, the increasing number of economic reforms in the region has led to adoption of imaginative energy policies and innovative institutional changes in countries such as Zambia, Kenya, Uganda, and Ghana. In Tanzania, the Ministry of Energy has agreed to allow the GEF-financed plant to sell electricity to Tanzania Electricity Supply Commission (TANESCO) at the market price. The agreement has also indicated that the plant can negotiate special arrangements with companies located near the facility to supply them with electricity directly. Similar reforms of the legislative and regulatory framework governing the power sector are being surveyed in other countries. This is going to create an attractive niche for potential investors in municipal-waste energy technologies.

Rapid urbanisation increases municipal waste and demand for modern energy supplies.

Africa's urban population is currently 257.8 million, 35 % of the continent's inhabitants. This figure could grow to 900 million, 55 % of the region's projected population, over two or three decades. The urbanisation inevitably brings increases in municipal solid waste (MSW). MSW is estimated to have doubled from 160 million tones in 1980 to 322 million tones for developing countries in 1990.

For instance, Nairobi, a city with population of about 3 million, churns out about 1,000 tones of garbage per day, a figure that is projected to increase to 6,000 tones by the year 2000.

#### Hazards of Uncollected Waste

The average total volume of uncollected waste is 30% to 50% of the generated solid waste in developing countries. This figure is 80% for Dar es Salaam. Due to inadequate waste collection and waste disposal systems, the uncollected waste creates severe health- and environmental hazards.

The existing waste disposal methods are either very capital-intensive; require huge expanses of land (e.g., landfills); or are inadequate. Other methods, such as incineration, are handicapped by high emissions which run up against strict environmental regulations.

#### Solution: Waste to Methane Energy

One of the most promising options for waste management is the conversion of waste to energy. Tapping methane from MSW can prevent air pollution, mitigate greenhouse-gas emissions, reduce fire hazards and methane explosions on landfills.

Several methods of producing energy from MSW have already been developed, such as pyrolysis, gasification, anaerobic digestion, and direct recovery from landfills. MSW quality assessments in a number of African countries, e.g., in Sierra Leone, have demonstrated that it can be converted inexpensively into new resources and low-cost energy.

For instance, an analysis of energy content of the MSW generated in South Africa indicates that, if it were recovered with 33% efficiency, it would be equivalent to 2.6% of the total of electricity distributed in 1990 (529 million gigajoules) by the country's largest utility, Eskom. Despite the potential, these technologies are still at an embryonic stage of development in Africa.

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e-mail: Skarekezi@Form-net.com.

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Europe  
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### **Recording Sustainable-Energy Successes**

The ideas of collecting sustainable-energy successes for Central and Eastern Europe is now materialising in a joint effort to compile these successes for use as NGO input to the European Energy Conservation Strategy. Work has already started in Slovakia (by the Foundation for Alternative Energy) and in Ukraine (by the Rivne Environmental Brotherhood). At the European Sustainable Energy NGO Seminar (Slovakia, June 22-26, '97) the current results will be presented and activities will be discussed for the Fall of 1997.

The work will start with collection of sustainable-energy cases to build a common database, and will continue with the selection of successes based on common criteria. The cases will be chosen by local INFORSE organisations and other NGOs. The local descriptions will be provided by local/national NGOs, and the compilation will be done by INFORSE-Europe in co-operation with the NGO Coalition "Environment for Europe" that follows the official process for development of the European Energy Conservation Strategy. This Strategy will be discussed at the Pan-European Environmental Ministers' Meeting, which is to be held in June '98 in Aarhus, Denmark.

All NGOs interested in the work are welcome to attend the European Sustainable Energy NGO Seminar. If it is not possible to participate, contact INFORSE-Europe before June 15, 1997 at:

- OVE-Europe, Gl. Kirkevej 56, DK-8530 Hjortshøj, Denmark, fax: +45-86227096, e-mail: ove@inforse.dk
- FAE, PO Box 35, 85007 Bratislava, Slovakia, fax: +421-7-836964, e-mail: bedi@seps.sanet.sk.

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**Sustainable Estonia**

As a follow-up to the Sustainable Europe project of the Friends of the Earth, the Estonian Green Movement and the Energy Center TAASEN are now developing a sustainable-energy plan for Estonia. The aim is to show how Estonian energy consumption can move towards sustainable development with a reduction of the fossil

fuel consumption by 47% between 1993 and 2010.

The work will evaluate the large potential for renewable energy and for energy efficiency gains through use of improved technologies. The project will employ an energy sector model (ESM) previously used for sustainable-energy plans for the Nordic countries, as well as the INFORSE-Europe "Guideline for Assessment of Renewable Energy Potentials, Barriers and Effects". Results are expected in July '97.

Further information: TAASEN, att. Tonu Lausmaa, 3 T<148><148>stuse, Tallinn EE0004, Estonia, fax: +372-6-397 901, e-mail: tlausmaa@teleport.ee.

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**Baltic Agenda 21**

The countries around the Baltic Sea decided in the Fall of 1996 to make a "Baltic Agenda 21", with energy as one of the themes. The objective of this "Baltic 21 - Energy" is to survey the energy options of the Baltic Sea region and to outline scenarios for sustainable development. This will include development of a proposal of a path to sustainable-energy development.

The work will be performed in an open process involving local and central authorities, NGOs, and others. The project is being managed by the Danish and Estonian energy authorities, with active contributions from a resource group of 20-25 persons. Central in the work will be three workshops with the resource group in the period from June to December '97, and a seminar for a larger group at the end of January '98. The final proposal will be joined with proposals for other sectors in a "Baltic 21 Declaration" to be adopted by the prime ministers of the countries around the Baltic Sea in May or June '98. Two INFORSE organisations are already included in the resource group: TAASEN (Estonia) and OVE(Denmark).

More information: INFORSE-Europe in Denmark or Danish Energy Agency, att. Marie-Louise Lemgart, Amaliegade 44, DK-1256 Copenhagen K, Denmark, fax: +45-33114743.  
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**Many Comments to Inspire the EU White Paper**

Following the comments of INFORSE - Europe and 50 other groups on the European Union (EU) Commission's "Green Paper for Renewable Energy", the EU is preparing a White Paper that should lead to stronger EU support for renewables. While the White Paper officially should be ready in June, it is likely to be postponed, maybe until October 1997.

The INFORSE-Europe comment to the Green Paper is available at INFORSE-Europe in Denmark by e-mail or by regular mail Ph:+45-8622700, fax:+45-86227096, e-mail:ove@inforse.dk.  
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**European SunDay, June 15**

ISES-Europe, the European branch of the International Solar Energy Society, is organising a European SunDay for June 15 to raise awareness of renewable energy through local events throughout Europe. Presently, events are planned in at least 12 countries. Everybody can organise an event, and all events will be published in Europe-wide media and on the SunDay web site.

Contact: Mark Thornton, SunDay'97, 192 Franklin Road, Birmingham B30 2HE, Birmingham, UK, fax: +44-121 459 8206. Web site: <http://www.demon.co.uk/tfc/Sunday.html>.  
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**Call for INFORSE-Europe Meeting**

All INFORSE-Europe members are hereby invited to  
the 6th INFORSE-Europe Meeting  
10 a.m. June 22, 1997, Budmerice, Slovakia.

The final agenda will be sent to all members at the end of May.  
Representatives of other NGOs are welcome to come as observers,  
if their requests are received in advance.

The Meeting will take place immediately before the European  
Sustainable Energy NGO Seminar, and participants are encouraged  
to combine the two events.

Further information:

INFORSE-Europe,  
Gl Kirkevej 56, 8530 Hjortshoj, Denmark,  
Ph:+45-8622700, fax: +45-86227096,  
e-mail: ove@inforse.dk.  
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### **Internal Energy Market**

New study foresees problems for sustainable development within  
the EU Internal Energy Market and proposes actions on national  
and EU levels.

In December 1996, after eight years of preparations and negoti-  
ations, the EU Council of Energy Ministers finally passed a  
directive to harmonise the electricity laws of the EU  
countries.

To make the electricity sector comply with certain standards of  
environmental protection, the directive includes Public Service  
Obligations (PSOs), which a country can lay upon utilities, and  
which can favour renewable energy. However, the directive does  
not secure supportive market access to renewables by, e.g.,  
laying down standard conditions for grid connection.

A central element in the new directive is the "system  
operator", which carries the overall responsibility for the  
functioning of the system and which must operate independently  
of other interests. An independent system operator can be  
organised in several ways: Sweden and Norway have a state-owned  
company for this, while the UK has a share-holding company.  
California is introducing a system in which the system operator  
will be a non-profit company, representing a broad spectrum  
relevant interests, including independent producers, consumers,  
and independent experts. A system operator has important tasks  
regarding the practical implementation of PSOs and the  
connection of independent power producers and thus can play a  
crucial role in the implementation of sustainable development.

Other potential problems for sustainable development are price  
development on a "liberalised" market (e.g., fluctuating  
electricity prices that make long-term investments difficult),  
the structure and elements of the system, as well as changes in  
the ownership structures.

These are some of the findings of a new Danish report  
"Renewable Energy and a Sustainable Development in a  
'liberalised' Energy Market", now published in English in

co-operation with INFORSE-Europe. In the report a number of actions are recommended to address the problems, including:

- All of the actions of the system operator must be fully open to public view, including when the operator's decisions clash with the commercial interests of specific companies. The system operator must report to a board with broad representation of relevant interests (including environmentalists and independent producers).

- A new form of competition that would attract new parties to the electricity-saving business should be introduced.

- The EU directive should be adjusted in order to remove barriers to renewable-energy technologies. This could include the right to grid connection, on favourable terms, for renewable energy, and a general EU minimum tariff based on the long-term marginal costs of the power system, including externalities.

- An information- and counselling network on renewable energy and energy savings should be formed, to be financed by the EU.

More information: See the publication-list on page 14.

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Americas

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### **New IDB Program**

\$ 1.5 million for Latin American Sustainable Energy Action Plans

The Inter-American Development Bank (IDB) started a Sustainable Markets for Sustainable Energies (SMSE) Program for the Latin American and the Caribbean Region.

The Program seeks to "develop and test a strategy for the IDB to act as a catalyst" for establishing clean-energy markets in the context of energy-market restructuring. The Program will assist in developing action plans including strategies that trigger implementation. Help will also be provided in obtaining financing from the IDB and from other lending institutions.

Later, pilot projects will be implemented in accordance with the action plans in the selected countries. This may lead to large -scale replication. After two years, the program will be expanded to all countries in the region.

The SMSE is funded at US\$ 1.5 million. The fund is provided by the IDB, the European Union and the US Government.

More information: SMSE/IDB, Jaime Milan and Connie Smyzer,

Ph: +1-202-6231949, fax: +1-202-6232157.

Source: CEF (see publication-list).

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### **Another Nuclear Plant Closing**

\$ 425 million for the Shut Down

At the end of 1996, the owners of the Yankee Haddam Neck nuclear power plant in Connecticut, USA, decided to permanently close their 582-MW reactor for a combination of safety and economic reasons. The decommissioning will cost at least \$425 million. Only \$200 million have been collected for

the purpose. This closure continues the pattern of the last decade, in which a nuclear plant is shut down every year or two. All of them closing well before the expected ends of their life-times. It underlines the fact that most nuclear reactors will not reach the projected operating life of 30 - 40 years.

Source: Sustainable Energy Coalition Update, February 1997.

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**US Electricity Restructuring**

Discussed by the US Congress

Several states of USA have decided upon varying plans to increase competition in the electricity sector. Proposals for federal regulation are now being discussed in the US Congress. In the ongoing discussion of a revised legal framework for electric utilities, one major issue is how to encourage continued increase of renewable energy in a more competitive electricity market. One of the proposals calls for the introduction of a "renewable-energy portfolio standard (RPS)", by which utilities are obliged to buy or to invest in a certain fraction of electricity from renewable energy. The Sustainable Energy Coalition in the USA has proposed a RPS of 2.5% new renewables by 2000, 5% by 2005, and 10% by 2010. Another proposal would impose a "system benefits charge" whereby all consumers would pay an amount that would be used to support the introduction of renewable energy and for other purposes, such as demand-side management. Other major issues include the consumers' "right to know" about competitive market conditions and about suppliers' environmental behaviour as well as "stranded investments". The latter term represents investments that cannot be recovered in a competitive market. Stranded investments are evaluated very differently by different observers, but one estimate (from Resource Data International) gives a total of \$200 billion, of which nuclear investments account for \$86 billion. Unresolved questions, particularly the one on "stranded investments," could easily extend this discussion for quite a while, before federal legislation is passed.

Source: Sustainable Energy Coalition Update, February 1997.

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**Solar Cooker Technological Change**

By Bashir Ahmad, Ph.D. Research Fellow, Technical University of Denmark

Why do some household users of solar cookers turn back to traditional cooking? Users should be more involved in technical development.

The objective of the solar cooking technological change is to

replace conventional stoves that are fuelled by environmentally non-sustainable, polluting, expensive, less available, and / or less hygienic energy sources.

However, facts indicate that in house-holds in which there is an option for conventional cooking, the interest in continued and regular use of solar cookers has declined. This happened even among direct target groups of the studied solar-cooker projects, where solar cookers were provided to the households free of charge or at subsidised prices.

In the following, two case studies show some basic user aspect that led to the decline of interest in using solar cookers.

#### Solar Box Cooker in India

In India, there has been a national solar-cooker program since the beginning of the 80's. To date, 400,000 Indian-produced solar box cookers have been sold, of which 40,000 were sold in Gujarat.

However, more than 50% of the urban households that have acquired a box solar cooker several years back have discontinued using their solar cookers for daily cooking. This was the conclusion of the study that I carried out in 1997.

I visited households and interviewed 20 urban families in Gujarat State and in Madras to figure out why their interest in the technology had declined.

The main reasons were:

- When a child in the family gets hungry, for example, around 10 - 11 a.m., one could not wait one or two hours for the rice to be cooked.
- The only area with constant sunshine that is available to the family is the roof. The housewife tried several days going up and down to cook with the solar cooker, but she finally got tired of going up and down, so solar cooking was discontinued.
- The family was not in a position to plan and prepare the raw food for the lunch already about 9-10 a.m.
- After the solar cooker broke, the family discontinued solar cooking because they were unable to get it repaired.

#### Parabolic Solar Cooker in Burkina Faso

Between 1977 and 1981, the Danchurchaid from Denmark constructed, distributed, and tested 250 parabolic solar cookers in Burkina Faso. Here, also, most of the users turned back to traditional cooking methods because:

- The design of the solar cookers did not allow a convenient stirring during cooking the basic meal, a heavy porridge.
- Women preferred to cook indoors to avoid strong sunlight.
- Women could not carry their cookers with them to the fields where they worked during the day.

#### The Problem

The problem is that the cookers are not compatible with ordinary everyday real-life situation of the user family. To discuss the background, one can roughly say that when the solar cookers were taking form as a cooking device in their design phase, the implications of ordinary everyday use conditions of users had not been adequately incorporated in the design.

Later, after the users put the solar cookers under ordinary use, the users experienced the actual benefits and requirements of their cookers. Here, individual users carried out use-value evaluation of their cookers. In the evaluation, the real-life

situation normally decides which cooking option is the most suitable. The shift of solar cooker users to traditional cooking methods reveals that the solar cookers have been given less use-value by their users.

#### User as Important Partner

Therefore, it is necessary to have a clear understanding of the users and their ordinary use situations. Considering the fact that it is not easy to know the details of ordinary use situations, before the users have tried them, one can ask how to incorporate the use-value aspects in solar cooker projects.

In a technological project such as the design and dissemination of solar cookers, a number of representative users (among the target group) could be involved in the development and implementation phases of solar cooker projects from the start. As the project develops, and the users experience the solar cookers in their real-life situations, collection and incorporation of feed-backs from the users will be important input for the improved designs of solar cookers.

More Information: Bashir Ahmad, Dept. of Building & Energy, Technical University of Denmark, Bldg. 118, DK-2800.  
Ph: +45-45251928, fax:+45-45934430, e-mail: ba@ibe.dtu.dk.

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#### **Zero Emission Concept**

By Lars Yde, Folkecenter for Renewable Energy, Denmark

A new brewery waste-treating system in Namibia uses all brewery waste as input to valuable products like mushrooms, fish, and chicken feed. Research that led to the first commercial operation of this kind in the world.

Namibian Breweries had decided to construct a sorghum brewery in Tsumeb, a five hours drive North of Windhoek, the capital city, and wondered if the zero-emission concept could be applied in the desert. Funded by the United Nations University (UNU), George Chan undertook the field visit in the summer 1995, and concluded that it was not only feasible, it was necessary. Less than 18 months later, on January 31, 1997, the first phase of the project was inaugurated.

The system engineered and built under the supervision of George Chan is the result of extensive research via the Internet. A group of scientists supported by the UNU asked questions of fellow scholars on how to make best use of the grain, the alkaline waste water, and the CO<sub>2</sub> gas that make up 98% of the waste from the brewery. The solution does not interfere with the core processing of the industry, but carefully tailors a system to use all waste towards valuable products.

#### Mushroom Producer

The spent grain traditionally was given away to farmers, but it is well known that cattle can not digest fibres. This results in a lot of gas. We know that cattle are the second largest source of methane gas, one of the major causes of the current global warming. The lignin-cellulose component, which is 70% to 80% of the spent grain, can only be broken down by the

enzymes of mushrooms. So, George Chan brought to Namibia Prof. Dr. S.T. Chang from the Chinese University of Hong Kong. This world expert on mushrooms trained the Namibians in the cultivation of this high-price product which is usually imported. Prof. Chang is confident that Namibia will soon be exporting mushrooms. Four tons of spent grain are sufficient to grow one ton of mushrooms. With four tons of waste a day, the brewery has become a major mushroom producer.

#### Chicken Feed

The spent grain is also rich in protein, up to 26%. Wasting protein is unacceptable, especially in Africa. So, George Chan, in co-operation with the Namibian University's Faculty of Agriculture and Natural Resources, initiated the cultivation of earthworms, and these are used as chicken feed. For a country that imports all chicken feed and 80% of its chicken, this is a blessing. Prof. Keto Mshigeni, the Pro-Vice-Chancellor of the University of Namibia and a well respected botanist, brought the zero-emission concept to Africa. He knew that providing food for the Namibians is one of the biggest challenges for the new University, which was only established in 1992, after Namibia gained independence from South Africa.

#### Fish Farming

About 80% of the water needed in the brewing of beer does not end up in the bottle or the can. When George Chan learned that Namibian Breweries had secured a license to extract water from an aquifer, and would only use 20% commercially, he took it upon himself to design a system that does not lose one drop. The waste water is alkaline and could be used for the cultivation of Spirulina algae. Just imagine, this algae generates up to 70% protein, exactly what is needed locally to fight child malnutrition. Normally, the law prescribes that the alkaline water needs to be treated chemically to make it pH neutral. This is costly. Since alkaline water is an excellent breeding ground, the algae will generate additional revenues and not extra costs. The brewery is not wasting water anymore; it has become a protein factory. The residual water is channelled to fish ponds, where the traditional multicropping fish farming is practised, as it is in China and in Vietnam. With a productivity of 15 tons per hectare per year, the brewery is now a fish factory.

#### Gas Used as Fuel

Biowaste is digested and produces gas. Instead of letting the gas flow through the intestines of cattle, it is captured and used as fuel, releasing some of the pressure on wood, which is the main source of energy for 80% of the population in Tsumeb.

#### More information:

- Dr. Carl-Goran Heden, member of the Swedish Royal Academy of Science. Ph:+46-8-33-4473, fax +46-8-31-4620, email:carl-goran.heden@soconline.com
- Lars Yde, Folkecenter for Renewable Energy, Ph:+45-97-9556600, fax:+45-97-956565. e-mail: fcenergy@inet.uni-c.dk

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## **Russian PV Space Technology Enters Homes**

By Eduard Gismatullin, Greenpeace anti-nuclear campaign, Russia  
"If there is a fairy-tale, then it's the solar station"  
Russian-made photovoltaics (PV) are used to supply home appliances in a village called Morozovsky in the south of Russia. The village is 1.000 Km to the south of Moscow and the farm is about 2 km away from the nearest grid. In 1994, Victor Titov bought a PV station with a total production capacity of 500W from a local PV production company Saturn. The whole installation was done by the company, and it cost about 5,000 USD. The installation can provide electricity at 24V and 220V. As the farmer Titov said: 'If there is a fairy-tale, then it's the solar station'. With the help of the PV station, the family can use now a fridge, television, stereo center, lights, and even welding equipment. This is enough for them in the summertime. In winter, the family lives in a winter house, which is part of the village and has a supply of electricity from the network.

### **10-Year Guarantee**

The PV station is called FES-0,5/24-220. As the company says, it is environmentally friendly while in operation, but there are some environmental problems during the production technology, which have been almost eliminated. Electricity is accumulated in a battery during the day and then can be consumed when it is needed. The station consists of 10 solar modules of the model "Saturn" BC-50/50, 10 batteries of 6ST-60, an inverter with a control panel, a frame, and wires. The lifespan of the station is expected to be 20 years, and the company is providing 10 years of warranty on the PV panels.

### **Russian Space Technology, 95 % Sells Abroad**

The above-mentioned Saturn Company was established almost 30 years ago to produce PV panels for Russian satellites and spacecraft. It also produces small rechargeable batteries for use in space technology. But, now that Russia launches fewer satellites than it once did, the company sells PV abroad in order to survive. The company is working with various foreign partners: Germany, Laos, Morocco, Israel, the South African Republic, Tunisia, etc. It produces about 1MW of PV a year, of which 95% is sold abroad. The company works in co-operation with the research institute ENIN in Moscow and with the Aluminum-Metallurgical Plant in Kamensk-Uralsk in the Urals. The average price of the PV module is 4-5 USD per 1W. For the whole solar system, including: batteries, a frame to hold the PV panels, electric wires, inverters, etc. the price is about 10 USD per 1W.

In Russia, there are at least 17 companies that are involved in the production of PV. The total annual capacity across the country is at least 2 MW. The number of the companies and the capacity can be more than this, but there is no real

information flow where it would be possible to get all the information about this type of equipment. The companies have to survive despite that there is almost no market for these products in the country. Thus, almost 95% of their products for solar electricity production is sold abroad.

In Russia, itself, the total capacity of installed PV systems is about 1 MW (IEA Survey '95: "Energy Policies of the Russian Federation"). They are placed in research institutes, houses, laboratories, border-guard check points, TV transmitters, etc. The average size of PV panels in Russia is around 0.5 m<sup>2</sup>, but sizes vary, depending on the purpose.

#### Russian Solar Potential

Russia is situated to the north of the most effective solar zone, called "the solar belt," which is located between the latitudes of 40 degrees south and 40 degrees north. Yet, Russia's solar energy potential is still considerable.

The most favourable regions for solar energy use are the regions of Astrakhan, Volgograd, Chita, Buryatia, Krasnodarsky, Primorsky, and Stavropolsky, according to Russian experts.

Utilising this potential would require a shift of governmental support and of international loans from the conventional and nuclear power to the solar technologies, i.e., PV and thermal solar collectors.

#### More information:

- JSC Saturn Company: 350 072 Krasnodar, Solnechnaya str.,8,  
Ph: +7-8612-578 205, 540 776, fax: +7-8612-543 595  
- Greenpeace Russia: Dolgorukovskaya str, 21 Moscow 103006,  
Russia.  
Ph: 7-095-9784917 fax: 7-095-2519088, e-mail:  
gpmoscow@glas.apc.org

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#### **Publications**

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#### **Energy After Rio, Prospects & Challenges**

Executive Summary 35p. Translation in all UN languages. The full Report will be published soon.

By Amulya Reddy, Robert Williams, Thomas Johansson. UNDP, United Nations Development Programme, International Energy Initiative, Energy 21, Stockholm Environmental Institute.

Contact: Annie Roncerel, Energy and Atmosphere Programme/SEED/BPPS, 1 United Nations Plaza, New York, NY 10017, USA. Ph: +1-212-906-6616,  
fax: +1-212-906-5148, e-mail: annie.roncerel@undp.org .

#### **Paying the Piper: Subsidies, Politics, and the Environment**

WorldWatch Paper 133, By David Malin Roodman et.al. Dec. 1996, 80p. \$5.

Contact: WorldWatch Institute, 1776 Massachusetts Ave.NW Washington DC 20036-1904, USA. Ph: +1-202-452-1999,  
Fax: +1-202-296-7365 .

#### **Voices from Africa, Sustainable Development, Issue No.6 70p.**

Contact: UN-NGLS, United Nations Non-Governmental Liaison

Service, Palais des Nations, CH-1211 Geneva 10, Switzerland.  
Ph: +41-22-798-5850, fax: +41-22-788-7366, e-mail:  
ngls@unctad.org.

**Financing Investments in Renewable Energy: The Role of Policy Design and Restructuring**

Financial models of cases of wind power and PV. Tax Policies and tax appetite. Electric industry restructuring and long-term contracts. Surcharge-funded policies, production incentives, above-market contract payments. Green marketing programs. Low-interest subsidised loans and guarantees.

By Ryan Wiser and Steven Pickle

March 1997, 88p.

Contact: Environmental Energy Technologies Division, Ernest Orlando Lawrence Berkeley National Laboratory, University of California, USA. Ph: +1-510-486-5474, fax: +1-510-486-6996, e-mail: pajuergens@lbl.gov. <http://eande.lbl.gov/EAP/UPP/reports/reports.html>.

- **How Global is Global & How Warm is Warming?**
- **Changing Coastlines, Effects of Climate Change**
- **CO<sub>2</sub> Mitigation and the Indian transport Sector**

20-page publications, 1996. Supported by the Ford Foundation. 'Popular publications' with charts explaining the concepts and facts.

Contact: TERI, Tata Energy Research Institute, Darbari Seth Block, Habitat Place, Lodhi Road, New Delhi - 110 003, India. Ph: +91-11-462-2246, fax: +91-11-462-1770, e-mail: mailbox@teri.ernet.in.

**Exploring US Residential & Commercial Electricity Conservation Potentials: Analysis of the Lighting Sector**

328 p A4, 1996, 40 US\$.

Dissertation by Diana Vorsatz, University of California, LA, USA.

Contact: Diana Vorsatz, Environmental Science Dept., Central European University, Nador u.9, 1051, Budapest, Hungary. Ph: +36-1-327-3021, fax: +36-1-327-3031, e-mail: envsci@ceu.org.

**Renewable Energy and Sustainable Development in a "liberalised" Energy Market**

Focus on legislation in the European Union and Denmark as well as other European countries. Translated and shortened from Danish. Published by the Danish organisation for Renewable Energy "OVE - Europe" in co-operation with INFORSE-Europe, 66p. \$15.

Contact: OVE-Europe, Gl.Kirkevej 56, 8530 Hjortshøj, Denmark. Ph:+45-86227000, fax: +45-86227096, e-mail: ove@inforse.dk .

**TERES II, The European Renewable Energy Study.**

The Prospects in 30 European Countries from 1995-2000.

The project was carried out for the European Commission ALTERNER program by ESD, Energy for Sustainable Development ltd.

Contact: Umberto Tiberi, ALTERNER DGXVII European Commission,

200 Rue de la Loi , Brussels, Belgium. Ph: +322-295-2281, fax:  
+322-296-6283 and Ian McChesney, ESD, e-mail: esd@esd.co.uk.

**Periodical:**

**Global Eco-Village Network Europe News-Letter**

No. 1 in 1997. Report of activities, calendar of events,  
community connections.

Contact: Ginsterweg 5, D-31595, Steyerberg, Germany. Ph:  
+49-57-6493040 fax:+49-57-642368, e-mail:  
even@lenensgarten.gaia.org.

**Baltic Negawatt**

Regional newsletter on the sustainable energy for the Baltic  
States. No 1. in 1997. Published by Re-En Center, TAASEN  
Lithuanian Green Movement, Latvian Information Office on  
Sustainable Energy.

Contact: Tonu Lausmaa, Re-En Center, 3 Tööstuse, EE0004  
Tallinn, Estonia, Ph: +3726-6542047, fax: +3726-397901, e-mail:  
tlausmaa@teleport.ee .

**Clean Energy Finance - CEF**

Quarterly Newsletter on investments in emerging markets, 6p.,  
No. 1 in 1996

Contact: Winrock International, 1611 North Kent Str, Suit 600,  
Arlington, VA 22209-2134, USA. Ph: +1-703-525-9430, fax:  
+1-703-243-1175 e-mail: fe@msmail.  
winrock.org, [http://solstice.crest.org/  
efficiency/cef/index/html](http://solstice.crest.org/efficiency/cef/index/html).

**CD-ROM:**

**UNESCO/ISEEK Energy Database**

Information on organisations in the fields of renewable energy  
and energy conservation from about 170 countries.

The CD is one of the strategic projects of the World Solar  
Summit Process. 2nd edition, 1996. It will be revised annually.  
Language: English.

Contact: ISEEK, Int. System for Energy Expertise and Knowledge,  
UNESCO Publishing, 1 rue Miollis, 75752 Paris Cedex 15, France.  
Ph: +33-1-45684578, fax: +33-1-45685741,  
e-mail: am.prados@unesco.org,  
<http://www.unesco.org/publishing>.

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**Events**

**\* Event with INFORSE participation**

May 25-28, 1997,

The 8th Global Warming Int. Conf. & Expo, New York, NY USA  
Info: Global Warming Int. Center, Columbia University,  
Fax: +1-630-910-1561.

May 27-29, 1997

The World Sustainable Energy Trade Fair, Amsterdam, Holland

Info: att. Alex Mee, European Media Marketing ltd., 6th floor  
22-26 Albert Embankment, London, SE1 7TJ, UK.  
Ph/fax: +44-171-5827278/-7938007, e-mail:  
sustain@emml.demon.co.uk. <http://www.emml.com/>

May 27-29, 1997  
The 3rd Expo & Symposium for New & Renewable Energy Equipment,  
Tripoli, Lybia  
Info: International Energy Foundation (IEF), PO Box 83617,  
Tripoli, Libya.  
Ph/Fax: +218-21-3331832/-3331831.

May 30-June 2, 1997  
Communities Seminar, Wicklow Mountains, Ireland  
Sustainability and Consensus Decision Making  
Info: Tudor Balinisteanu,  
The Glencree Centre for Peace, Glencree, Nr. Enniskerry, Co.  
Wicklow, Ireland.  
Ph: +353-1282-9711, fax: +353-1276-6085.

June 12-13, 1997  
International Climate Change Conference & Technologies  
Exhibition, Baltimore, MD, USA  
Info: PO Box 236, Frederick, MD 21701, USA.  
Ph/fax: +1-301-6953762/-6950175.

June 12-13, 1997  
Managing the Future Growth of Cogeneration in Europe, Milan,  
Italy  
4th Annual International Management Conference.  
Info: Christiane V. Motte, Euromanagement, PO Box 2192, 5600 CD  
Eindhoven, The Netherlands.  
Ph/fax: +31-40-297-4944/-4950, e-mail: euroma@IAEhv.nl

June 9-14, 1997  
ECEEE 1997 Summer Study, Spindleruv Mlyn, Czech Republic.  
Sustainable Energy Opportunities for a Greater Europe. The  
Energy Efficiency Challenge.  
Info: European Council for a Energy Efficient Economy Summer  
Study, (ECEEE) c/o Danish Energy Agency, att. Hanne Pauli,  
Amaliegade 44, 1256 Copenhagen K, Denmark.  
Ph/fax: +45 - 33- 926700 / 114743

June 15-18, 1997  
Wind Power'97 Austin, Texas, USA  
Conference and exhibition  
Info: Linda Redmond, American Wind Energy Association, 122 C  
Street, NW, 4th floor, Washington DC 20001 USA.  
Ph:/fax: +1-202-383-2500/-2505, e-mail:  
lindaredmond@mcimail.com.

June 16-18, 1997  
IPCC Workshop, Roskilde, Denmark  
Mitigation & Adaptation Cost Assessment: Concepts, Methods &  
Appropriate Use  
Info: UNEP Collaborating Centre on Energy and Environment, Risø

National Laboratory, PO Box 49, DK-4000 Roskilde, Denmark.  
Ph: +45-4632-2288, fax: +45-4632-1999, e-mail:  
john.christensen@risoe.dk.

June 22, 1997 \*  
INFORSE - Europe Meeting, Slovakia  
Info: INFORSE - Europe,  
Please see the next event and at the announcement on page no 9.

June 22-27, 1997 \*  
European Sustainable Energy NGO Seminar, Budmerice, Slovakia  
Info: INFORSE - Europe, c/o OVE-Europe, Gl. Kirkevej 56, 8530,  
Hjortshøj, Denmark.  
Ph: + 45-86-227000, fax: +45-86227096, e-mail: ove@inforse.dk.  
Please see announcement on page no 9.

June 23 - 27, 1997  
UNGASS, UN General Assembly Special Session, New York, USA  
Evaluation of the first 5 years of sustainable development  
after UNCED in Rio.  
Info: Division for Sustainable Development, DPCSD, United  
Nations, New York, NY 10017, USA, <http://www.un.org/dpcsd>.

June 22-28, 1997  
Int. Conference on Sustainable Agri-culture for Food, Energy &  
Industry, Braunschweig, Germany  
Info: FAL, Institute of Crop Science, Bundesalle 50, 38116  
Braunschweig, Germany.  
Ph/fax: +49-531-596600/-596365.

June 26 - 30, 1997  
Clean Energy Brigade Training Seminar, Prague, Czech Republic  
Seminar on positive actions to conserve energy. Travel  
reimbursement to East European particip.  
Info: PIANO, Prague International Antinuclear Office, Chvalova  
3, 13000 Prague, Czech Republic.  
Ph:+420-2-9003-1895, e-mail: piano@ecn.cz.

June 30-July 4, 1997  
14th European PV Solar Energy Conference & Exhibition,  
Barcelona, Spain  
Info: European Commission, Joint Research Center, H.  
Ossenbrink/EPVSECE 14, 21020 Ispra (VA) Italy. Ph/fax:  
+39-332-785885/-789268, e-mail: jennifer.rundle@jrc.it.

July 8-11, 1997  
Energy Efficiency Services in the 21 Century, Saratoga Springs,  
NY, USA.  
Info: ACEEE, American Council for an Energy-Efficient Economy,  
1001 Connecticut Avenue NW, Suite 801, Washington DC 20036,  
USA. Ph: +1-202-429-8873, Fax: +1-202-429-2248, e-mail:  
ace3-conf@ccmail.pnl.gov.

July 14-18, 1997 \*  
CONFINTEA V. 5th UNESCO International Conference on Adult  
Education

Info: UNESCO Institute for Education  
Ph: +49-40-448041-0, fax: +49-40-4107723, e-mail:  
uie@unesco.org.  
Please see article on page no 4.

July 22-24, 1997  
ISAAE'97 Johor Bahru, Malaysia  
Int. Symposium on Advances in  
Alternative/Renewable Energy  
Info: Energy Group, R&D Unit, Universiti Teknologi Malaysia,  
Locked Bag 791, 80990 Johor Bahru, Malaysia. Ph/fax:  
+60-7-5504577/-5566159, e-mail: othman@fkj.utm.my.

August 24-29, 1997  
ISES '97, Korea  
Info: Korean Solar Energy Society, 635-4 Yeoksamdong,  
Kangnamgu, Seoul 135730, Korea. Fax: +82-2-5689208.

October 13-16, 1997  
Asia Pacific Initiative For Renewable Energy & Energy  
Efficiency, Jakarta, Indonesia  
Info: Alternative Development Asia, 5F, 3 Wood Road, Wanchai,  
Hong Kong.  
Ph/fax: +852-2574-9133/-1997, e-mail: altdev@hk.super.net.  
Please see article on page no 6.

November 3-4, 1997 \*  
Renewable Energy Conference, Buenos Aires, Argentina  
Info: Roque Pedace, Amigos de la Tierra, REJIMA, Salguero 829 8  
a, Buenos Aires, 1177, Argentina.  
Ph:+54-1-8647845, fax:+54-1-9636962, e-mail:  
postmast@rejima.uba.ar.

November 19-21, 1997  
Right Light 4, Copenhagen, Denmark  
4th European Conference on Energy Efficient Lighting.  
Info: Gert Nielsen, Association of Danish Electric Utilities,  
Resenørns Alle 9, 1970 Frederiksberg C, Denmark.  
Ph/fax: +45-31-390111/-395958, e-mail: def@danel.dk.

December 11-12, 1997  
Climate Convention, 3rd Conference of the Parties, Kyoto, Japan  
Info: Secretariat for the Framework Convention on Climate  
Change, PO Box 260124, 53153 Bonn, Germany.  
Ph: +49-228-815-1000, fax: +49-228-815-1999, e-mail:  
secretariat@unfccc.de.

April 13-17, 1998  
CUBASOLAR '98  
International workshop on solar energy  
Info: Luis Berriz, Socie, Calle luz No.375, e/Picota y  
Composttela. Habana Vieja, Habana, Cuba.  
Ph: 537-61 2846, fax: 532-331732 or 332699

20-25 September 1998  
World Renewable Energy Congress V. Florence, Italy

Info: A.A.M. Sayigh, World Renewable Energy Network, 147  
Hilmanton, Lower Earley, Reading RG6 4HN, UK.  
Ph/fax: +44-118-961-1364/-1365.

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**Update of World Contact List**

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In the following issue of the newsletter we will  
publish the annual Sustainable Energy Contact List (excluding  
Europe).

Please send us corrections if your organisation changed its  
mail address, ph, fax, or e-mail.

**Correction to Contact List - Europe, February '97**

Energy Center TAASEN,  
Core member of INFORSE  
NEW ADDRESS: att. Tonu Lausmaa,  
3 T<148><148>stuse, Tallinn EE0004, Estonia.  
Ph: +372-6-6542 047, fax: +372-6-397 901,  
e-mail: tlausmaa@teleport.ee.