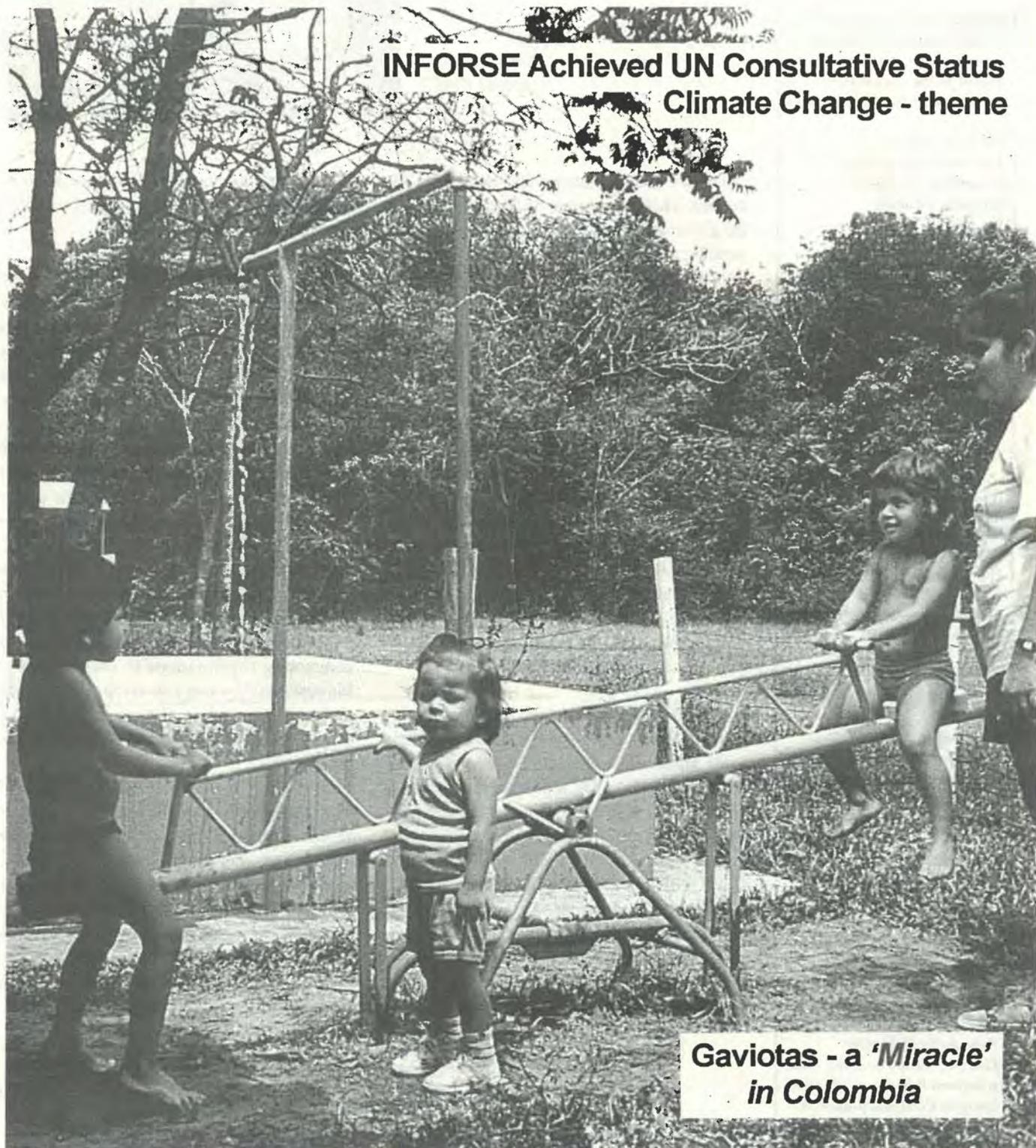


SUSTAINABLE ENERGY NEWS

Newsletter for **INFORSE** International Network for Sustainable Energy.

No. 22, September 1998

**INFORSE Achieved UN Consultative Status
Climate Change - theme**



**Gaviotas - a 'Miracle'
in Colombia**

Sustainable Energy Worldwide Contact List (excl. Europe) Included

Sustainable Energy News

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Photo on the front page:

Kids playing and pumping water at the same time (see article about Gaviotas, Colombia, page no.16).

Photo: Alan Weisman.

Fresh Air in Buenos Aires?



Demonstrations during COP3 in Kyoto.

There are many concerns that should be addressed while our common climate is high on the global agenda in the first two weeks of November, at the 4th Conference Of the Parties to the Climate Convention (COP4). One overriding concern is that man-made CO₂ emissions continue to increase year by year, despite nearly a decade of global climate-change discussions.

One critical area is whether and how the different means for CO₂ accounting, trading, and reduction that were decided in principle during COP3 in Kyoto are made operational. There is a high risk that attention will be concentrated on technical details of hot-air trading and loop-holes, that basically will lead to nowhere, and will divert the attention from the necessary dramatic cuts in emission of greenhouse gases, first of all in industrialised countries.

Among the 'Kyoto-tools' are *Activities Implemented Jointly (AIJ)* and the *Clean Development Mechanism (CDM)*. Both implies that investments in CO₂ reductions in another country can substitute reductions in the investing country. While AIJ will be organised among Annex-1 (industrialised) countries, the CDM will be arranged between Annex-1 and Non-Annex-1 countries. One issue will be how to account properly for these CO₂ reductions, both on the 'buying' and on the 'selling' end. Another issue, maybe even more crucial, is how to ensure that, e.g., CDM investments

in a developing country are supporting local development goals, not an agenda decided elsewhere.

Another issue to look for at COP4 is the nature of investments in CO₂ reductions. On the electricity production side, there is a trend to look for large, centralised solutions involving, e.g., nuclear power, large hydro schemes, and more efficient use of fossil fuels by power stations, whereas the potential of renewable sources of energy in general is overlooked. This is despite the fact that grid-connected renewable sources of energy have proven to be a cost-efficient means for CO₂ reduction in many countries, and that renewable energy holds a large promise for CO₂-neutral supply of energy to billions of people living in remote off-grid areas. And again, the key role of local actors such as municipalities, companies, and community organisations in creating a base for sustainable energy development is likely to be overlooked in the quest for central, easy-looking, and presumably 'efficient' solutions.

The sustainable energy agenda for COP4 should promote initiatives for energy conservation and renewable energy, and should work for strong local involvement in planning, decision making, and implementation of CO₂ reduction. And adding to this, the benefits of clean air, energy independence, and job creation could provide some much-needed fresh optimism in the climate talks.

René Karotki
INFORSE Secretary

Media, Environment, and Citizens

By Marianne Nyholm and René Karottki,
INFORSE Secretariat

The first event in an intended five-year co-operation program on media, environment, and citizens, took place this June, in Denmark. The program was initiated by INFORSE as a follow-up to UNESCO's 5th Conference on Adult Education, which was held in Hamburg in 1997.

The first element of the program comprised a study tour and workshop in Denmark, with 32 participants from 22 countries. The participants visited NGOs, media organisations, ministries, the Parliament, and private companies on an 8-day study tour. This fostered a dialogue that gave inspiration to the subsequent "1st International Workshop on Media Environment and Citizens" held at the European

Film College in Ebeltoft. In addition to the participants of the study tour, the workshop comprised participants from the UN Headquarters in New York, as well as from CNN, UNESCO, and various European media organisations.

The workshop was organized into two parts. The first part, based on skills and tools, focused on press releases, television, and video. The second part consisted of presentations and discussions regarding an intended five-year co-operation program.

The concept of a program was well received by the participants, and is now being developed further by the INFORSE Secretariat. In the meantime, the participants have initiated follow-up initiatives in their own national contexts that are seen as important elements of the overall program. The participants are communicating with each other via a

newly established e-mail forum.

Among the key elements of the program are regional and global workshops as well as production of directories, guidelines, booklets, manuals, and videos, all to facilitate the contacts and the joint work of NGOs and media. As an immediate follow-up to the Ebeltoft workshop, plans are in progress to produce and distribute a manual/directory on video, film, and TV.

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CSD9 Discussions Started

Three years before the UN Commission for Sustainable Development will have sustainable energy on its agenda at its ninth session (CSD9) in 2001, the preparations have already started. At the invitation of Austria, experts discussed the potential agenda for CSD9 at a meeting in Vienna in June. Based on experiences from INFORSE, the Danish Forum for Energy and Development presented a strategy for promoting sustainable energy via local communities. It stated that a local community approach must be an important part of multilateral programs for sustainable energy, including a global capacity-building program for local communities. The ability to establish a partnership with local stakeholders, including local NGOs and decision-makers, is a key to success in promoting and implementing renewable and sustainable energy.

INFORSE will continue to follow the preparations for CSD9 and will strive to have INFORSE member organisations present at all major events.

More info: INFORSE Secretariat.
Available document: "Local Community Strategy for Promotion and Implementation of Renewable and Sustainable Energy" by H. Bjerregaard.



Participants at the seminar on Media, Environment and Citizens in Denmark, 1998

Sustainable Energy to Combat Desertification

INFORSE Workshop at UNCCD COP2
in Dakar, November '98

Desertification affects the livelihood and food supply of over 900 million people worldwide, especially in Africa.

The UN Conference on Environment and Development (UNCED) in '92, initiated the preparation of the United Nations Convention to Combat Desertification (UNCCD). The Convention was adopted in June '94, and in December '96 it entered into force. The Convention recognises the role of renewable-energy technologies in combating desertification, especially in reducing dependence on wood for fuel and for pumping water.

The Second Conference of Parties (COP2) to UNCCD will take place in Dakar, Senegal, November 30 to December 11, '98. ENDA in Senegal will co-ordinate the NGO community at COP2.

The experience of INFORSE members and other NGOs in using renewables in

arid land will be presented at a NGO workshop during the COP2, under the topic, "Renewables as a means to combat desertification." In parallel with the workshop, there will be a NGO exhibition of posters and other informational material.

The activities will give NGOs an opportunity to inject their experience into the UNCCD process. Other expected results are:

- development of proposal for actions to disseminate renewable energy technologies in arid areas.
- start of joint activities to follow up on COP2.

For participation, proposals for contributions, and further info, contact: ENDA (see address on back page), <http://www.enda.sn/energie/>, or the INFORSE Secretariat.

The Climate Convention: Hard Discussions

By Roque Pedace, REJIMA/INFORSE
Latin America, Argentina
Shortened by the editors

The 4th Conference of the Parties (COP4) to the Climate Convention will take place in Buenos Aires in November, 1998. This meeting will pave the way for participating countries to ratify the Kyoto Protocol by 1999. A preparatory meeting for COP4 was held in Bonn during June this year. Four main issues were discussed:

- flexible mechanisms: emissions trading, joint implementation, and the clean development mechanism;
- sinks of greenhouse gases;
- review of adequacy of commitments;
- developing-country participation.

The review of adequacy of commitments and developing-country participation were the most controversial elements of the talks in Bonn. Disputes over these issues threaten to derail the Kyoto Protocol.

Progress of the Convention towards its ultimate objective (i.e., to prevent dangerous, man-made climate change) is measured through reviews, including a review of adequacy of commitments. Currently, the only agreed-upon commitment is that industrialised countries should stabilize their greenhouse gas emissions at 1990 levels by 2000. The first review of these commitments underscored their inadequacy to reach this goal. It is of paramount importance that the second review, to take place no later than December, 1998, get these countries back on track to meet their existing commitments. Beyond this, the review must set out a vision for the future of the Convention.

Some industrialized countries, e.g., Australia and the US, saw the review as an opportunity for introducing new commitments for developing countries. The US even threatened not to



Controversy over Review

While all participating countries agree that the current commitments are inadequate, there was considerable controversy over what the objective of the review should be.

ratify the Kyoto Protocol if no commitments are made by developing countries and is increasingly pressing developing countries to take on voluntary commitments to limit their low greenhouse gas emissions.

This position was hotly contested by the coalition of developing countries known as "G77 & China", who stated that "COP4 must not be distracted from carrying out the review by the introduction of any extraneous matters such as the consideration of new commitments for Parties not included in Annex 1" (i.e., developing countries).

The growing tensions between the developed and developing world threaten ratification of the Kyoto Protocol. A proactive strategy is required to break the deadlock.

CO₂ & Climate Change Reach New High

The Worldwatch Institute released its "Vital Signs 1998: The Environmental Trends Shaping Our Future". It reports that climate change carbon emissions reached a record high worldwide in 1997, totalling 6.3 billion tons, up 1.5% from 6.2 billion tons in 1996. Atmospheric concentrations of CO₂ climbed to 364 parts per million, the highest in 160,000 years. With record high world temperatures in 1997, the 14 warmest years since record keeping began in 1866 have all occurred since 1979.

Evidence of the warming can be found in melting icecaps, shrinking glaciers in the Alps, and the breakup of the sea

ice around Antarctica. It added that "during the 1990s, sales of coal and oil have grown just over 1% a year (or 8% in the last 8 years). Non-CO₂-emitting wind power has grown by 26% a year. Growth in the sales of solar cells, averaging 15% annually from 1990 through 1996, jumped a phenomenal 43% in 1997.

Contact: Worldwatch, 1776 Massachusetts Avenue, NW; 8th Floor; Washington, D.C. USA.
E-mail: worldwatch@worldwatch.org
<http://www.worldwatch.org/>.

Ahead for Buenos Aires, November 1998

Future Emission-Reduction Targets: NGO Proposals

Solutions put forward by NGOs at Bonn aimed to stabilize greenhouse gas concentrations at a safe level in accordance with the Climate Convention. According to these proposals, a global greenhouse gas emissions budget must be calculated first, and then the budget must be shared equitably among the world's nations on an equal per-capita basis.

Progressively stronger emission-reduction targets will be difficult for industrialized countries to accept politically. However, the reduction targets could be negotiated in successive commitment periods and can be phased in over time, allowing countries to move steadily towards their equitable share. The review of commitments provides an opportunity to set stronger emission-reduction targets for industrialized countries in the future, to address equity concerns of developing countries, and to reinject the science into the process.

Developing-Country Participation

The Convention explicitly recognizes that social development and eradication of poverty are the first and overriding priorities of the developing country Parties. Industrialized countries must take the lead in combating climate change and its impacts.

Following articles 4.8 and 4.9 of the Convention and 2.3 and 3.14 of the Kyoto Protocol, COP4 aims to significantly further discussions of strategies

to meet the needs of developing countries that arise from the adverse effects of climate change and/or from the implementation of response measures.

Several developing countries are showing considerable interest in one of the flexible mechanisms generated by the Kyoto Protocol, known as the Clean Development Mechanism (CDM). This may provide direct benefits to developing countries as well as help to avert dangerous climate change. However, it has significant drawbacks which may undermine this objective.

Intervals for Future Reviews of Commitments

The Convention states that review of the commitments shall take place at regular intervals determined by the COP until the objective of the Convention is met. A decision by COP4 on this issue is extremely important for future climate negotiations. If reviews were carried out in the year preceding the termination of

each commitment period, as suggested by some in Bonn, there would not be enough time to take appropriate action based on the outcome of the review. A more frequent review process will be needed.

Conclusion

Early ratification of the Kyoto Protocol is of paramount importance, and potentially damaging loopholes must be closed. Parties must actively pursue implementation of their commitments under the Convention, since several developed countries look likely to overshoot their 1990 levels by the year 2000. If the ultimate objective of the Convention is to be met, there must be consideration of the longer term. In the future, progressively stronger reduction targets for industrialised countries will be needed, which should include a limit on global greenhouse-gas emissions and equitable distribution of fossil-fuel consumption.



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Photos by
G.B. Olesen., OVE.

Cartoon by
R. Vania, CSE.



Climate Change Vocabulary

AIJ	Activities Implemented Jointly.
Annex-1 Countries	Industrialised countries that commit themselves to stabilising CO ₂ emissions 1990-2000.
CDM	Clean Development Mechanism.
COP4	4th Conference Of the Parties.
G77	A group consisting of the majority of developing countries.
GHG	Greenhouse Gas.
JI	Joint Implementation.
UNFCCC	UN Framework Convention on Climate Change, in short the Climate Convention.

The Clean Development Mechanism - CDM

INFORSE will give special attention to the CDM. In this article, there is a short overview of the CDM and NGO reflections on it as we know them at the INFORSE Secretariat by August 1998.

More detailed NGO comments are available from the INFORSE Secretariat; contact person: Asger Garnak.

Kyoto Protocol

So far, the officially agreed-upon definition of the CDM is article 12 of the Kyoto Protocol. Main points are:

- The CDM deals with projects in developing countries in which emission reductions can be counted towards the emissions budget of industrialized countries.
- Reductions in emissions should be additional to any that would occur in the absence of the certified projects.
- A share of the proceeds from certified project activities shall be used to assist developing countries that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.
- The CDM shall be supervised by an executive board set up by the countries. CDM projects are subject to whatever guidance may be provided by this executive board.
- Certified emission reductions in the period 2000-2008 can be applied towards compliance in the first commitment period (2008-2012).

Greenpeace:

CDM is one of the loopholes in the Kyoto Protocol. It will inflate the emissions of the industrialized countries. Rules covering the CDM should place a quantitative limit on its use in order to ensure that domestic action is the priority. CDM projects should be limited to renewable energy or energy-efficiency projects that are at the top end of energy practice in the world.

Because of the uncertainty associated with certifying emission reductions, only a part of the reductions should be added to the emissions budget of industrialized countries.

A strong and independent CDM executive board should be formed. The board should be separate from other development entities such as the World Bank, and should have a composition reflecting North-South equity.

ENDA, Senegal:

CDM should balance the interests of industrialized countries with those of developing countries. The focus should be as much on ensuring sustainable development as on establishing a mechanism for cost-efficient emissions reductions.

Activities Implemented Jointly (AIJ) arouse concerns that Africa might effectively be left out of the CDM process, since only one out of 75 AIJ pilot projects is being implemented in Africa.



To include Africa CDM must:

- Function on a **multilateral** basis (i.e. not just country to country)
- Give attention to **avoided future emissions**.
- Stimulate development of the nascent markets in developing nations.
- Support the development of both **organizational and technical infrastructure**.
- Operate according to an **explicit set of criteria** that prioritize sustainable development.

Climate Network Europe - CNE:

- There should be a limit on the fraction of emissions reductions that industrialized countries can get through the CDM.
- Trading certified emission reductions (CER) should not be allowed;
- The CDM must be additional to official development assistance and to the development of accelerated technology programs according to article 4.5 of the Climate Convention.
- The CDM must also be additional to the necessary integration of GHG accounting into all future programs of multilateral development banks;
- The CDM should only consist of renewables (excluding large hydro) as well as demand-side and cogeneration project activities.

- CDM activities should be compatible with overall national developmental and environmental priorities. Host countries should prepare strategies in advance that identify the role and opportunities for CDM technologies.
- The executive board should be independent and with a clear mandate. Southern countries should be over-represented on the board.

West Coast Environmental Law Association, Canada (Chris Rolfe):

One of the main weaknesses of the Protocol is that, under CDM, credit is likely to be given for projects that would have occurred in the absence of the mechanism. The best way to mitigate this problem is to establish stringent criteria for setting the baselines against which emission reductions are measured.

Center for Science and Environment (CSE), India:

CDM is riddled with moral and other loopholes. CSE questions the underlying assumption that it is cheaper to reduce greenhouse-gas emissions in developing countries than in developed countries. It also warns developing countries of the problems with "selling" the cheap reduction options to developed countries, leaving more expensive options for future agreements on emission reductions.

Further issues important to INFORSE:

A narrow project approach tends to ignore the often far greater importance of framework conditions such as macro- and sector policies. There is a real risk that the project-based CDM will favor such a narrow project-approach, which is generally considered outdated and ineffective. It must be ensured that framework conditions, market development, and capacity-building are addressed in a way that complements the project focus of CDM.

A central issue is whether the CDM will be designed in a way that is compatible with the practices and priorities of NGOs, i.e., taking a bottom-up approach that centers on local participation. Traditionally small-scale projects give high transaction costs for donor organizations. As a result these organizations tend to prefer large-scale (and often conventional) projects. The costs of project certification can further place locally based, small-scale projects at a disadvantage.

The Finger-Pointing Will Continue, But No Reductions

Gurmit Singh, Coordinator, Malaysian Climate Change Group (MCCG)

COP4 in Buenos Aires is likely to be a repeat of all the previous COPs - a lot of hot air and finger-pointing but virtually no action to reduce greenhouse-gas (GHG) emissions. The almost useless Kyoto Protocol will be invoked in the same breath with demands that developing countries make concrete commitments while industrialised nations twiddle their thumbs. The reduction targets of the latter group, after all, are in the next millennium, well after the 'Year 2000' computer bug!

It is amazing that so many developing countries, including China, have signed the Protocol while the US has not even moved in that direction. Why?? Have they (the G77) not learned any lesson from the way the Convention itself was adopted in 1992? They have given the US virtual veto power over the coming into force of the Protocol. So much for saving the climate.

In this dream-world of climate negotiations, the global public is being fed the illusion that GHG emissions are being curbed and that global warming will, at most, be a transient freak. The US legislators appear to have seized on this false but convenient picture with the help of powerful lobby groups, especially from the fossil-fuel industry.

Instead of admitting and correcting the failure to curb global warming, the world seems to have an almost manic obsession with escape mechanisms like Clean Development Mechanism (CDM), Joint Implementation (JI) and emission trading. The UN agencies have jumped on the bandwagon, organising panels and seminars in many parts of the world on these topics rather than asking why nothing concrete is being done to reduce GHG emissions immediately.

From our viewpoint, COP4 will not be a milestone in reducing emissions, but a platform for further damage control, e.g., for plugging loopholes in the Protocol and exposing those who con-



tinue to spew out ever-increasing amounts of GHGs almost daily. Holding the COP in a developing country is no comfort, especially since Argentina has shown itself least interested in staying closely with the G77 positions.

Let us hope that Latin American NGOs will be able to mobilise the necessary resources so that southern NGOs can match their northern counterparts - in numbers, in lobbying, and in clear-cut messages to the delegates as well as to the global audience. We need to expose the lies and misrepresentations that are flourishing at the expense of the global climate and of the efforts of developing countries.

INFORSE

At the Climate Convention's 4th Conference of the Parties, INFORSE will focus on the planned Clean Development Mechanisms (CDM) and on renewable energy as a key to CO₂ reduction on a large scale. Apart from political lobbying, press work, etc., the most important activity will be the two workshops outlined below. They are both included as side-events in the official program.

Clean Development Mechanism Workshop, November 2, 1-3 p.m.

How can the CDM be an efficient tool for sustainable and renewable energy development in Non-Annex-1 countries (i.e. developing countries)

The objective of the workshop is to discuss and to develop recommendations on how the resources allocated for CDM and other international financing mechanisms could be channelled most effectively into sustainable-energy activities that meet the national and local

Activities Planned for UNFCCC COP4 Buenos Aires, November 2-13, 1998

development goals of Non-Annex-1 countries. Maximising the roles of local authorities, companies, and NGOs in large-scale sustainable energy programs is of particular concern.

Renewables in Large Scale Workshop November 12, 1-3 p.m.

CO₂ reductions through large-scale use of renewables. Key actors and alliances; present and future initiatives.

The workshop will highlight the important role of renewable energy in reduction of CO₂ emissions. Emphasis will be placed on the mechanisms, alliances, and action needed to make renewable energy the most important source of energy on a global scale.

The INFORSE activities for COP4 are organised in co-operation between the INFORSE Secretariat and the INFORSE regional coordinator, REJIMA. The Secretariat will appreciate to be informed on

INFORSE member organisations that will be participating in COP4 in order to discuss their contributions to and suggestions for INFORSE activities.

Please Contact: INFORSE Secretariat,
See address on the back page.

Local NGO Forum for Climate Conference in Buenos Aires

INFORSE-Argentina is a party to Foro del Buen Ayre (FdBA). This is the name of the COP4 Local Forum that was founded by NGOs involved with the Climate Convention. It is organizing activities both in the City and within the COP site. Buen Ayre means good air, or fine weather according to the Spaniards who christened the city where COP4 will take place.

Info: REJIMA, See on the back page.

The World Bank Listened to NGOs in India

By Raymond Myles, INSEDA/
INFORSE-Central Asia, India

In the preparations of the new World Bank energy study on India, NGOs were involved in a Joint National NGO and World Bank Workshop on "Environmental Issues in the Power Sector in India" May 6-7, 1998. (See issue no. 21). 40 people participated.



Construction of biogas plant in India

NGOs had an opportunity to communicate their perception on the issue of environmentally sustainable rural energy options. The workshop was an important milestone in a lot of respects. The World Bank did recognise that

- the NGO community (about 25,000 NGOs represent the 800 million population) is one of the stakeholders in effective environmental protection.
- the NGOs' recommendations needs to be listened and fully reflected in the key findings of the World Bank study, which will be helpful to policy makers to incorporate into future planning.
- a more fruitful collaboration and meaningful partnership can be built between the Indian NGO Community and the World Bank in planning and implementation of environmentally sustainable development programs to empower rural people.
- the World Bank should consider earmark grants for national NGO networks to implement decentralised renewable-energy projects.
- the World Bank could also play an effective role by being pro-active in its approach. The World Bank should assist and provide funding support to NGOs for innovative, path-finder, ground-breaking projects as well as adaptive R&D projects.

The Workshop participants listened to the views of NGOs on several issues:

The economic incentives:

- Restructuring of Electricity Board
- Improved billing and recovery
- Tariff reform for agriculture and other sectors
- Tariff increased mode
- Air quality and emission standards and regulation

The implementation of renewable technology:

- Realism
- Affordability
- Cost consideration
- Availability
- Maintenance

Rural energy and welfare:

- Energy and the welfare of women
- Education, awareness, communication, and networking
- People's participation in rural energy

The NGOs promoted the small and medium-sized decentralised power generation projects. They also expressed their concern about big power plants, which have been creating lots of environmental problems and health hazards as well as water, air, and land pollution.

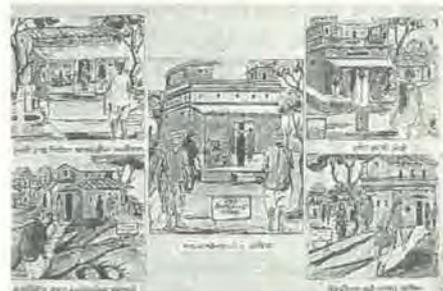
Educational material

The NGOs presented several successful NGO-driven renewable-energy projects that have been realized in India (see articles on the biogas program in issues 14/p.7, 10/p.14, 9/p.5, 7/p.6). NGOs expressed their willingness to undertake decentralised power projects, provided that flexible funding support was available. Such projects would require the awareness, motivation, and organisation of local people; participatory planning and implementation; capacity-building; and the training of local people to do maintenance, repairs, and replication after successful demonstrations. The socio-technical expertise for undertaking such projects is available within the NGO networks.

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Protest New Nuke in Turkey

Turkey is planning to build its first nuclear power plant at Akkuyu. A number of Western companies have proposed to deliver the technology, and a decision on the construction is due this fall. As a last attempt to stop it, the Canadian Nuclear Awareness Project asks as many as possible to protest to the Turkish prime minister and energy minister:



Sayin Mesut Yilmaz (Prime Minister),
Basbakan Ankara, Turkey.
Fax: +90 312 417 0476

Sayin Cumhur Ersumer (Energy Minister)
Enerji ve Tabii Kaynaklar Bakani, Bakanligi
Devlet Konya Yolu Uzeri, Bestepi, Ankara, Turkey
Fax: +90 312 212 2973

Information: <http://www.ccnr.org/> and e-mail: nuaware@web.net.

Women and Renewable Energy

By Mrs Zareen Myles, Women's Action For Development, WAFD, India

Rural women and children involved in the collection and transport of firewood are facing great problems. The day of the rural women in WAFD's project area



starts at 4.00 a.m. in the summer and 5.00 a.m. in the winter. During the entire day each woman is busy, either cooking or looking after the domestic animals or farming operations or collecting firewood or looking after the children. She is the first to get up in the family and, at the end of the day, she is the last to sleep. Biogas, smokeless chulla, and pressure cookers can greatly reduce the drudgery of women in cooking. WAFD experience shows that there is a big need for introduction of affordable devices for energy conservation and efficient

utilisation of available energy. This could be done by appropriate awareness and educational programs as well as by motivating and encouraging the rural people to use these devices. Service facilities should also be created at the local level for renewable technologies. Funding agencies should treat the rural energy program as a developmental program that would improve the health of women and children, remove the drudgery, and save time, leading to improving women's and children's quality of life, instead of treating it just as a techno-economic program. Therefore, it is necessary to have liberal financial assistance for the promotion and implementation of RETs.

WAFD is member of INSEDA, AIWC, and INFORSE. Contact: c/o INSEDA.

Women as Key Players in Renewable-Energy Development

By Lalita Balakrishnan, Rural Energy Department, AIWC, member of INFORSE, India

Women, at last, have been identified as one of the key players in the management of energy resources.

Women's Role in the NGO Forum

Women's role in matters concerning environmentally friendly renewable-energy technologies was discussed at a symposium on April 2, 1998 at Vigyan Bhavan, India.

It was organised by All India Women Conference (AIWC), an NGO network of 300 grassroots, and by CASE Australia & India, and REPSO Winrock International. The symposium was held during the first series of meetings associated with the Global Environmental Facility, March 29 to April 3, 1998, as part of a three-day NGO Forum that ran parallel to the official sessions.

There were 75 participants representing NGOs, the organisers, and the International Centre for Environment

and Development, Geneva; the Government of India; and Development Alternatives, India.

The AIWC presented some of its 15-year, first-hand experience with the central role of women in the development, adoption, and use of environment-friendly technologies. Slides shown gave participants glimpses of the National Program of Improved Woodstoves and National Program of Biogas Development that are being implemented by the AIWC members.

The symposium's key conclusion was that women are key contributors to, entrepreneurs in, and beneficiaries of sustainable development; yet, they lack visibility and empowerment in these roles.

Concerning promotion and adoption of environment-friendly renewable-energy technologies, the following is-

sues were discussed:

- Supporting the role of women
- Income generation at local levels
- Role of NGOS

Join Future Workshops, Make Them A Success

September 20, 1998, Italy, and November 26-27, 1998, India

We from the AIWC invite INFORSE members to participate fully and make our workshop a success at the World Renewable Energy Congress V in Italy, and ISREE-6 in India. See event details in the events list on page no. 19.

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Wind Energy in China: Institutional Barriers

By Lin Gan, CICERO, Norway.

China has a huge potential to become a dynamic nation in wind energy development, if institutional barriers are reduced. To realize this expectation, vigorous policy measures at the national and regional levels need to be established and readjusted.

150,000 Small Windmills

Until the late 1980s, China's wind turbine development's main objective was to establish capacity via domestically manufactured small-scale wind turbines. The main aim was to build a decentralized, environment-friendly energy system and to increase the quality of life for the poor in isolated rural communities.

As a result, in 1996, there were 150,000 Chinese-made small wind turbines in use. China's small wind turbines have become a mature technology with increasing export. Currently, products are being exported to 22 countries.

Large Wind Turbine Import

The shift of policy emphasis toward large wind turbines started in the early 1990s. Prototypes for wind turbines of 100-200 kW were tested and demonstrated from 1985 to 1995, but efforts to market them largely failed. This failure can be attributed to high-tech contents of large wind turbines, small investment, and high cost. In 1990, the wind farms' installed capacity was 13 MW; by 1996, this number had increased to 60 MW (16 wind farms with 237 units) and, by 1997, to 160 MW. Another 71 units of 500-600kW generators will be installed in 1998. Most of the production units are imported from foreign suppliers.

Future Plans and Potentials

Exploitable wind resources are estimated at 250 GW. China has set up a plan to develop 1,000 MW of wind energy capacity by the year 2000. This objective will require about 10 billion Yuan (US\$ 1.2 billion) of investment. Large-scale wind farms in Xinjiang, Inner Mongolia, and Guangdong Provinces are under rapid development. In Guangdong, the first domestically manufactured wind

turbines (200 kW and 300 kW) have been installed and demonstrated.

Investment Loans, Taxes, and Price Distortions

Wind energy development in China is restrained by relatively high investment costs. Bank loans for wind energy investment have high interest rates (11.7%) and short terms (less than 5 years to pay back the loan). Taxes for imported equipment are high: import tax (12%) and VAT (17%). VAT for small hydroelectric development is at 6%.

Soft credits provided by foreign governments usually contain 35% grants, but this advantage is overtaken by the taxes. In addition, VAT for electricity produced from wind is set at 17%, the same as for electricity generated by coal-based power plants, which enjoy the advantage of taking depreciation on equipment. No depreciation incentives for wind turbines are available so far.

Current development of wind energy is further handicapped by low prices for wind-generated electricity. There are wide energy-price distortions in the energy market. Wind energy competes unfavorably with other conventional energy sources such as coal, because of the lack of proper energy-price mechanisms that could internalize social and environmental costs of energy production, distribution, and consumption.

State-owned Companies

State-owned companies are the main players in China's wind-energy market, such as the China Fulin Windpower Development Corporation, established in '92, and others on the regional

Chinese-made 200 kW wind turbine (prototype) installed at Pingtan Island, Fujian.



level in Inner Mongolia, Xinjiang, and Guangdong Province, where wind energy is given high priority. Most provinces shows a growing interest in wind.

Private Sector

Large foreign companies started their engagement in China in the late 1980s. Lately, their involvement in China has intensified, particularly through cooperation with regional governments and the national wind energy companies.

Private Chinese companies involved in the wind energy industry are rare. This is related to high risks in investment and long pay-back periods. However, some private enterprises and groups are showing strong interest in investing in wind development, but they are reluctant to take decisive action because of the lack of policy incentives.

Need to Move Barriers

China's experience in wind energy development demonstrates that a lack of adequate policy framework constitutes a major barrier to cost-effective wind energy dissemination. This is due in part to an energy policy distorted in favor of conventional, i.e., fossil-fuel-based energy expansion. Many distorted policies are established due to the lack of understanding of wind-energy-related social and environmental benefits. It is important to make more efforts in human-resources development and capacity-building. The roles of education, training, and media are crucial in fostering such development in the long run.

Current wind energy development in China is sustained to some extent by incentives such as soft loans and grants that are provided by multilateral and bilateral development assistance. To achieve sustainable development of wind energy, mechanisms for encouraging interest from the private sector and commercialization of domestic products should be improved.

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INFORSE East and Southern Africa News



Consultative Meeting

By AFREPEN/FWD, Kenya,
INFORSE regional coordinator

The Consultative INFORSE Meeting brought together participants from 9 countries of the region. It was organised together with another meeting on Renewable Energy Technology (RETs) held in April, 1998 in Kenya. The objectives of the Meeting were to:

- Introduce INFORSE to potential new members;
- Review the progress of INFORSE activities in the region;
- Discuss possible regional activities; and
- discuss an action plan for east and southern Africa.

The meeting commenced with an introduction to the following aspects of the

INFORSE network:

- structures; overall objectives (e.g., providing organisational and lobbying support in various forms);
- activities undertaken by the members in the past (e.g., participation in various summits, drafting campaign paper, contribution of articles on

regional developments to Sustainable Energy News).

This introductory session was followed by discussions on how the above aspects can be integrated into the regional network, and of possible methods of strengthening them. The discussion focused on the need to improve:

- exchange of information through networking;
- creation of energy projects and activities;
- promotion of international collaboration in the south;
- recruiting of new members.

The issue of South-South-North cooperation was also extensively debated. After the session, several NGOs expressed their interest in joining the INFORSE network.

Additional issues that participant raised which can improve the Network Activi-

ties included:

- Alerting relevant organisations in the region to the existence of the INFORSE network. The need for strong national networks was emphasised.
- Training members in report/proposals writing. Different donors prefer different structures, frameworks, and approaches. The INFORSE secretariat in Denmark was asked to provide documentation on project proposal-writing.
- Use of the conferences, workshops, and meetings to lobby for support. Numerous conferences are taking place at national, regional, and global levels. Members can have an impact, influence events or developments at these levels if resources to participate are available.

Participants endorsed the east and southern African Action Plan including:

- Input to the UN Commission for Sustainable Development (CSD9);
- Study of the job creation potential of renewable energy technologies;
- Assessment of the level of penetration of selected RETs, such as improved stoves;
- Assessment of RETs' local production capability;
- Exchange of information with Asia.

Two field visits were conducted to:

- The Chloride Exide Kenya Ltd. battery manufacturers, located in the industrial area of the city. In addition to batteries, they also supply solar systems; and
- The Kenya Power and Lighting Company's wind turbine installation at Ngong Hills, about 40 km from the city (See photo).



Information:
FWD, Kenya,
INFORSE co-ordinator. See address on the back page.

Sweden Gives Zambia \$600,000 US for Rural Power

A photovoltaic (PV) project is to be conducted in Zambia for a period of 5 years from 1998 to 2002. The project is expected to test and demonstrate a framework for providing electricity to rural communities outside the reach of the grid using Energy Service Companies (ESCOs). Over half of the population lives in rural areas and only 2% of these have access to electricity.

The project will initially cover four communities in the Eastern Province. The aim is that the results would help to improve the living standard of people in the rural areas. The project will also promote business, especially micro and small-scale agro-related enterprises, which in turn will contribute to the improvement in the levels of income and of the Zambian economy as a whole.

The \$600,000 US is being given by the Swedish International Development Agency (SIDA) through the Stockholm Environment Institute (SEI). Additionally, the project is being co-funded by the German GTZ, which is providing almost \$30,000 US. The project is in line with Zambia's energy policy of promoting optimum supply and utilisation of energy in indigenous forms.

More information: SEI, Stockholm Environment Institute
Box 2142, 10314 Stockholm, Sweden. Ph: +46-8-412-1400, fax: +46-8-723-0348,
e-mail: postmaster@sei.se, <http://www.sei.se/>.

INFORSE-Europe Activities

By Gunnar Olesen, OVE, Denmark/
INFORSE-Europe Coordinator

New Action Plan

A new INFORSE-Europe action plan was adopted at the INFORSE-Europe meeting on June 26. With the new plan, the support and awareness activities will include sustainable-energy success stories, development of a renewable-energy education system, and support for national sustainable-energy strategies (see below). The lobbying activities will cover, e.g., follow-up of the new Pan-European Energy Conservation Guideline, EU energy activities, and the preparation for the UN Commission for Sustainable Development (CSD) meeting on energy in 2001. For the EU accession countries, INFORSE-Europe will support an early closure of high-risk nuclear power plants.

More information is available from the INFORSE-Europe coordinators that were re-elected at the meeting: Emil Bedi (FAE, Slovakia) and Gunnar Boye Olesen (OVE, Denmark).

Sustainable-Energy Successes

INFORSE-Europe has published a collection of 25 success stories in sustainable energy in central and eastern Europe (CEE) for the ECO-Forum '98 in June in Århus. It was a combined work of several INFORSE-members. It cov-



Participants at the INFORSE-Europe meeting, June 1998.

ers examples of NGO campaigns as well as projects involving energy efficiency and renewable-energy sources: wind, solar, small hydro, and biomass.

The report, entitled "Sustainable Energy Successes in Central and Eastern Europe", is also available on the internet at www.inforse.dk and at www.zpok.hu. (See publication list)

The idea is not to stop with these 25 cases, but gradually to increase the number. To do that, we invite organisations throughout CEE to propose additional cases that are proven successes or that have good potential for success. The additional cases will be included in the internet sites and will be used for "fact sheets" following the same format as the publication. Send your ideas to INFORSE-Europe c/o OVE, Denmark.

Renewable-Energy Education on the Internet

INFORSE-Europe is preparing an internet-based education programme on renewable energy, aimed towards tertiary and university education. The plan is to present material for students, NGOs, and professionals who are familiar with traditional energy systems, but who lack a deeper understanding of the use of renewable energy: potentials, technological development, economy, etc. The material will include exercises and guides to additional information.

Contact: INFORSE-Europe c/o FAE, Slovakia.

INFORSE-Europe addresses are on the back page.

Common Declaration from Environmentalists and Workers

Parallel to the EU summit in Cardiff in June, representatives of the environmental network *European Environmental Bureau* (EEB) and of the *European Trade Union Congress* (ETUC) met and agreed upon a common declaration on environment and employment. They call upon the EU and the member countries to realize that employment policy is an integrated part of sustainable development and vice versa. They further call for full integration of environmental concerns into the coming EU guidelines on employment. They propose that the guidelines include:

- an ecological tax reform that would create jobs by reallocating taxes from labour to capital and natural resources;
- targeted reforms of indirect taxation to lower taxes on environmental products;
- revised public subsidies for the benefit of those uses that contribute the most to sustainable development, e.g., en-

ergy efficiency and renewable-energy supply;

- use of EU structural funds to support sustainable development and employment.

The common declaration is a result of a European project concerning green job creation initiated by *Forum for Energy Development*, Denmark and *General Workers Union in Denmark* (SiD). The project addresses environment and employment in particular Spain, Italy, UK, Germany, and Denmark. Project reports from these countries are available.

The EEB and the ETUC will continue to work together towards a socially and environmentally sustainable Europe.

Further information:

EEB Brussels (John Hontelez), ph: +32-2-289 1090;

ETUC Brussels (Willy Buschak), ph: +32-2-224 0411;

SiD, Copenhagen (Ole Busck), ph: +45-33972401;

News on Nukes



EU Enlargement - Perspectives for a Nuclear-Free Future?

European Conference, Vienna, Austria, September 25-27.

With the goal of nuclear phase-out in Central European countries that will join the EU, a conference is being organised for NGOs that participate in anti-nuclear and energy policy work as well as for some representatives from governments, EU institutions, etc.

There will be a forum for discussions between experts from the EU, GOs, and NGOs. The last day is reserved for internal discussions among Citizens' Organisations (ECOs) about future cooperation and strategy development. The conference will focus on financial and political implications of nuclear energy. It is the hope that the conference will lead to increased co-ordination between anti-nuclear NGOs in western Europe and in the EU accession countries, as well as to strengthening of ECO networks.

Participation is only possible with prior registration. The conference is being organised by Global 2000, Greenpeace, and Anti Atom International.

Info: att.: Oliver Butz, GLOBAL 2000, Flurschuetzstrasse 13, A-1120 Vienna.

Tel.: +43-1-812 57 30-41

Fax.: +43-1-812 57 28

E-mail: global2000@t0.or.at

Antinuclear Actions

This summer has seen a number of actions against nuclear power plants in Europe. Probably one of the largest was a demonstration in Copenhagen on July 1, when more than 3,000 people met to express their anger at the continued operation of the Swedish nuclear power plant in Barsebäck, only 22 km away. The demonstration was organised by The Danish Energy Movement OOA.

A smaller, but remarkable, action was a protest against the Kola Nuclear Power Plant on the Kola Peninsula in NW Russia. 150 activists from 6 countries organised an action camp and a peaceful demonstration in front of the nuclear power plant administration buildings. The activists asked for closing of the power plant, while construc-

tion of new nuclear reactors are planned. The camp was organised by ECODEFENSE, Gaia Apatity, and other Russian organisations.

Information: ecodefense@glas.apc.org, <http://cci.glasnet.ru/antinuclear.html>

Western Loans for New Nukes in Ukraine?

The discussion of completing the two nuclear power reactors in Khmelnytsky (K2) and Rivne (R4) in Ukraine is entering a new stage with a public phase of the environmental impact assessment. This assessment is a part of the EBRD's (European Bank for Reconstruction and Development's) procedure to approve loan to the plants. If the EBRD gives funding to these plants, it will be the first time that a multilateral development bank has given loans to new nuclear development in Central and Eastern Europe (CEE). The assessment is open to organisations in potentially affected countries, which, in this case, is all of Europe. It is important to involve as many organisations as possible.

So contact: Bank Watch Network CEE, Energy Coordinator Petr.hlobil@ecn.cz and <http://www.geo.ut.ee/bankwatch>.

Multilateral Energy Investments in CEE: Time for Change

Bank Watch Network for Central and Eastern Europe (CEE) has analysed the energy investments of multilateral de-

velopment banks in 16 CEE countries. They find that the investments are far from supporting sustainable development. More than half of the 5,400 mill US\$ invested in energy projects has gone to oil and gas development as well as to coal-fired power plants. The World Bank has not transformed the progressive parts of its energy policy into practice, while the European Investment Bank does not even have an energy policy and has not financed a single project supporting demand-side energy efficiency. These banks rarely invest in renewable energy except for large hydro. They do not assess the CO₂-emission effects of their activities. They leave environmental impact assessments (EIAs) to project promoters that seldom involve the local population sufficiently and, in a number of cases, have not fulfilled the EIA procedures of the banks. On the positive side stands the energy efficiency unit of the European Bank for Reconstruction and Development (EBRD). Since the start of the unit in 1994, EBRD has increased its lending for energy efficiency from very little to a major part of its energy lending.

Bankwatch is proposing a number of improvements in the banks' policies and in management, e.g., the formation of special units for energy efficiency and renewable energy in all the banks, more open processes for development of energy policies, more involvement of local partners in projects, and screening of all projects for energy-efficiency potential. Further info: *Bankwatch Network CEE*.

Appeal to Stop Nuclear-Waste Dumping

Near the small village named Kalna on the Stara Planina, one of the most beautiful mountain areas and preserved natural parks in Europe, on the border between Yugoslavia and Bulgaria, there is a closed uranium mine. The mine was abandoned until recently, when the Yugoslav government started to make plans to turn it into a dump for nuclear waste from all over Europe. Yugoslavia does not have nuclear power plants; thus, it has very little nuclear waste. However, the government is pushing an initiative, under cover of concern for the country's own waste, to present the mine as an ideal place to store atomic garbage from all over Europe. The mine could absorb some 60% of European nuclear waste, but we do not want to become a nuclear toilet for the sake of the money in their pockets.

Support our campaign to stop the mine by signing our petition.

Contact: Green Table (Zeleni Sto), Krunska 78, 11000 Beograd, Yugoslavia.

E-mail: greentbl@eunet.yu, <http://come.to/the.green.table/>

Tel: + 381-11-457 463; fax: + 381-11-435 146.

Århus '98

By Gunnar Olesen, INFORSE/OVE

Ministers Agree on Energy Conservation and Nuclear

At the Pan-European Environmental Ministers' meeting in June in Århus, Denmark, all the European countries welcomed a common guideline for energy conservation. They also endorsed a common statement on energy efficiency, which calls for the following to be done before 2005:

- phase out (or modify) environmentally harmful energy price subsidies;
- include environmental costs (if practical and necessary) in energy prices;
- develop minimum efficiency standards for buildings, household appliances, and standardized equipment;
- develop a strategy for promotion of cogeneration of heat and electricity combined with renewable energy.

In the ministerial declaration from the meeting, the ministers agreed to phase out dangerous nuclear power plants, and 10 countries asked for a complete phase-out of nuclear energy.

Even though the text has diplomatic loopholes, the energy issues were some

of the most debated items on the ministerial agenda. The USA and Canada took part in the meeting as members of the UN Economic Commission for Europe, but they could support neither the guideline nor the statement. The proposals seemed to be too radical for them. The ministerial declaration, guideline, and statement are available at <http://www.mst.dk/aarhus-conference/> as well as from UN-ECE, and from INFORSE-Europe.

NGO Activities for Sustainable Energy

At the ECO-Forum '98 in Århus in June, parallel to the ministers meeting, the energy and climate group of the ECO-Forum met and decided to continue its activities. It will cover:

- follow-up from the Århus conference, including implementation of the decisions and energy-conservation guideline from Århus;
- energy and climate issues at the Pan-European Environment and Health Conference in London, 1999;
- follow the activities of the UN-ECE Committee on Sustainable Energy;
- asking observer status at negotiations on the Energy Charter Treaty

Svend Auken, Danish Minister of Environment and Energy, visits the exhibition at ECO-Forum.



implementation and its Energy Efficiency Protocol.

The energy and climate group is coordinated by INFORSE-Europe and Climate Network Europe (CNE). CNE is primarily responsible for activities geared towards the Environment and Health Conference in London.

The ECO-Forum continues as an umbrella for environmental organisations' Pan-European activities. In the coming year, the focus will be on the Environment and Health Conference to be held in London and on implementation of the convention on public participation that was signed by the ministers in Århus. The activities are coordinated by a new coordinating board that was elected at the ECO-Forum plenary.

USA News

Largest Windpower Facility

At Buffalo Ridge in Minnesota, USA, 107 MW of windpower is about to come online in the largest single windpower facility in the world so far. The project is developed by the large Minnesotan utility *North States Power Company*. The *Lake Benton I Power Plant*, consists of 143 turbines, 750 kW each, produced by the Enron Wind Corporation (EWC).

Sources: Renewable Energy World, July 1998 and Enron: <http://www.enron.com/>.

Californian Electricity Markets Give Room for Sustainable Energy

When the electricity sector of California was restructured into a kind of open market, special provisions were made to support renewables and energy conservation. Whether the restructuring will be a benefit for sustainable energy is hard to judge. It removed a system that required

the power companies to invest in renewables and it reduced the utility funds for energy conservation considerably.

In the new system, 2.5% of the revenue from electricity sales is allocated to a renewable energy (RE) and energy conservation fund. The first \$162 mill. of the RE portion was just allocated to under an auction scheme. New plants bid for a per-kWh production credit that will be paid for the first five years of production. Over 500 MW of renewables, including wind, geothermal, and landfill gas won allocations at an average production credit of 1.2 cents/kWh.

For energy conservation, efforts are under way to have the funds administered independently of the utilities. This is moving forward, though on a slower-than-expected schedule.

Green market opportunities are also being developed. Power companies market "green" electricity at a modest premium. Generally, they are offering customers the chance to buy electricity that is

from 50% to 100% renewable, exclusive of large hydro, at a premium that ranges from 10% to 20% of the customers' bills (roughly 1 to 2 cents/kWh). Since the market opened in April '98, about 1% of the household customers (100,000 households) have chosen to buy these green products. Environmental groups and others have created a "seal" (renewable brand) "green-e", with a minimum requirement of 50% renewable energy. Most of the products offered in California have complied with this requirement in order to earn the seal. The Environmental Defense Fund (EDF) advises customers to go beyond these minimum requirements and buy electricity from new renewable-energy plants to spur the development of more renewables. Two companies are marketing electricity with 5-25% renewables.

Source: EDF, <http://www.edf.org/programs/energy/>. See also: www.energy.ca.gov, www.cleanpower.org, www.green-e.org.

Backcasting Sustainable Energy in Argentina

By Marcelo Alvarez, Daniel Fernandez, Manuel Fuentes, Roque Pedace, REJIMA, Argentina, INFORSE regional coordinator.

INFORSE workshop proposes wind, PV, and energy efficiency to replace nuclear and large hydro in Argentina's future energy system.

Backcasting

One method of strategically planning for sustainability is often referred to as "backcasting." It is a systematic, step-by-step approach that defines a framework for sustainability as a guideline for today's measures. A core activity of the INFORSE workshop in Argentina in December, 1997 was a backcasting exercise for wind energy, photovoltaic energy, and energy efficiency to help mitigate climate change.

Wind Energy

For wind energy, we assume market penetration of 10% of demand by 2010, equal to 4.5 GW installed capacity. It is also assumed (Shell International Limited, 1996) that a reduction of between 50% and 33% in the cost of wind energy will be achieved by the year 2010.

For the year 2020, one forecast indicates an increase in energy demand by 50% from the year 2010. Under this circumstance, the following scenarios were considered:

- Wind-energy penetration of 10%.
 - Up to 40% wind-energy penetration.
- In this scenario, the Argentinean grid system will be strongly interconnected with those of Brazil and other countries. There will be specific market niches for the energy surplus from intermittent resources such as storage systems, industrial uses (for instance, hydrogen), etc.

Photovoltaic Energy

For photovoltaic energy, we assume market penetration of 3.5% of demand with an installed capacity of 2.4 GWp. This value was chosen after taking into account the present rural electrification program and its implications in the next several years, as well as the creation of decentralised photovoltaic systems interconnected to

the grid. It is also assumed that a reduction in the cost of the photovoltaic module to \$2 US/Wp-\$1 US/Wp will be achieved by the year 2010.

The 2020 scenario considered up to a 10% of photovoltaic-energy penetration. In this scenario, the Argentinean grid system will be strongly interconnected with those of Brazil and other countries. Provision will also be made for market niches for the energy surplus from intermittent resources.

Rational Use of Energy

The energy-efficient scenario discussed was calculated under the hypothesis that all of the available and economically feasible technologies are taken into account. Under this hypothesis, reductions of electricity consumption by 30% and 40% by 2010 and 2020, respectively, can be achieved.

Comparison with Governmental Study

The Argentine government has implemented the "Study Project on Climate Change" in Argentina for the Climate Convention. This includes a project on mitigation of greenhouse gas (GHG) emissions. The scenario developed in this mitigation project concludes that a 6% reduction in electricity demand by 2010, and a 9% reduction by 2020, will be achieved under energy-efficiency programs. In the mitigation scenario, hydroelectricity and nuclear energy are the chosen substitutes for fossil fuels, while the penetration of renewable energies (except hydro) is almost negligible. The

study is too conservative with respect to the competitiveness of PV and wind energy when compared with the assumptions in our study. Our technological learning curves were taken from three different studies: TERES II, DEO, and IIASA*. Further, our projections assume that regulatory changes will be adopted to optimise integration of intermittent sources. In this way, higher market penetration can be achieved by renewable-energy technologies, and neither new nuclear power plants nor new mega-hydroelectric plants are needed.

Official Planning Challenged

At two seminars in June, 1998 attended by representatives of electricity cooperatives, NGOs, and energy officials, INFORSE Argentina challenged official views of the energy future with the results of its backcasting. Harsh discussions took place about the regulatory framework, the economic incentives, and the prospects of the technologies. The reliance of the government on fossil fuel became apparent just at a time when renewables legislation is being discussed in the Parliament. The legislation calls for a \$0.01 US per kWh for wind electricity.

The seminars also provided a forum for interesting exchanges of views with regard to the jobs issue and the policies needed to enforce the legislation currently considered by the Parliament, including the need for research, development, and dissemination. Danish experience in this was brought into the discussion by two Danish participants from the Danish Energy Agency.

* Reference to the studies:

-TERES II, Alternator Program European Commission. ESD Ltd. The European Renewable Energy Study, 1995-2020.

- Commercialisation of Utility PV Distributed Power Systems, D.E. Osborn SMUD, Proceedings ASES, 1997.

- IIASA, International Institute for Applied Systems Analysis, Global Energy Perspectives to 2050 and Beyond, 1995.

Information and copy of article: INFORSE Latin America, c/o REJIMA, Argentina (see back page).

*The biggest Argentinean wind farm.
Photo: NEG Micon*



Gaviotas - a Miracle

By Alan Weisman, USA.

As a journalist who has covered environmental disasters from Chernobyl to Antarctica's ozone hole, the most hopeful sign I've seen that humans can live sanely and sustainably is a village in one of the most unlikely places: Colombia, a country whose name makes most people think of either cocaine, coffee, or civil war. Yet as Paolo Lugari, the Colombian founder of the village of Gaviotas, told me: *"They always put social experiments in the easiest, most fertile places. We wanted the hardest place. If we could do it there, we could do it anywhere."*

The Vision & the Challenge

Almost three decades ago, Colombian Paolo Lugari, the brilliant son of a tropical geographer, flew across the Andes behind Bogota, and saw Colombia's huge, nearly empty, rain-soaked eastern tropical plain stretching all the way to Venezuela. The soils were so thin that only low-nutrient grasses grew. The rivers were full of piranhas and malaria-bearing mosquitoes. But someday, Lugari realized, barren savannas like these would be the only place to put growing populations. This was a perfect setting, he decided, for a research station to design the ideal civilization for the tropics.

In Bogota's universities, he challenged engineers and soil engineers to join him. *"Can you build a micro-turbine to tap the energy of a slow tropical stream?"* he asked. *"Can we get anything useful to grow in those soils?"* It was important, he believed, that Third World people find their own answers. *"All our development models have been created in countries with four seasons, with totally different conditions from tropical countries,"* he argued. *"When we import solutions from northern countries, not only don't we solve our problems, but we import theirs."*

The Solutions

My drive to Gaviotas from Bogota took 16 hours by jeep over a rutted, muddy track through nearly empty savanna. It was also dangerous no-man's-land, filled with guerrilla and paramilitary roadblocks.

Then, what resemble aluminium sunflowers began to dot the landscape. These were delicate windmills.

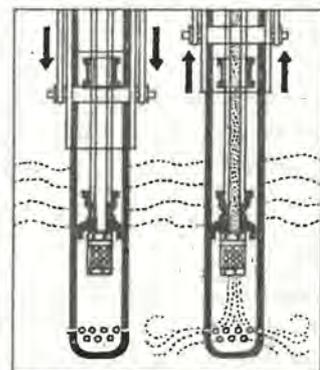
I came to a large pine forest, nearly 10,000 hectares, that should not have been growing from this infertile plain. Amid the trees was a cluster of low white buildings and colorful houses with dramatic, swooping roofs, all bearing solar collectors. Begun in 1971, Gaviotas was now a self-sufficient town of 200, financed by selling the alternative technology it has developed and by a clean, renewable forest industry that earned the United Nations' 1997 World Zero Emissions Award.

Their first problem was finding pure water. They invented hand pumps whose internal pistons were encased in plastic sleeves. By leaving the heavy piston stationary and lifting the lightweight sleeve instead, they found they could reach aquifers several times deeper than normal, and pumping was so easy they hooked them to children's seesaws. Next came ultra-light windmills light enough to tap soft tropical breezes, but strong enough to withstand tropical storms; solar water heaters that work in the rain; and soil-free hydroponic systems to raise crops. They also built an all-solar hospital that uses underground wind ducts and hollow roof construction for self-cooling, and a kitchen equipped with their most expensive invention: solar-powered pressure cookers. But much cheaper is their solar "kettle," which uses sunlight to sterilize water and a simple heat-exchanger to cool the purified water for immediate drinking. Gaviotas chose to not patent its inventions, so others could share them. Their tools have spread elsewhere in Latin America: Nearly 700 villages in Colombia alone now use their pumps.

Sustainable Forest

After years of trying, they finally found a plant that could survive Gaviotas' thin, highly acidic soils. Caribbean pines from Honduras grew rapidly, and the Gaviotans learned they could harvest renewable bark resin for profit without cutting down their spreading forest. This natural resin replaces petroleum-based substances in paints, cosmetics, perfumes, and medicines. When distilled in Gaviotas' pollution-free factory, its byproduct is marketable turpentine - and the boiler's steam exhaust generates electricity.

Gaviotas Manual Sleeve Pump (front page photo)



Besides providing a sustainable living, the pines have fostered what biologists call a miracle: In the shelter of these fast-growing trees, a tropical forest not seen for thousands of years in these savannas has regenerated. The 250 native plant species they have identified in the forest inspired them to begin an ethnobotanical research lab in their all-solar hospital, collaborating with local Guahibo Indians. Many Guahibos and rural peasants live at Gaviotas, riding to work on Gaviotas-designed savanna bicycles.

Oasis of Imagination

In spite of Colombia's ongoing civil upheaval, drug wars, and ecological stresses, Gaviotas has evolved into a community of peace and sanity. It proves that even the leanest environments provide rich tools and resources if people choose to live sensibly. *"The only deserts are deserts of the imagination,"* says Paolo Lugari. *"Gaviotas is an oasis of the imagination. Elsewhere they're tearing down rainforests. We're putting one back. If we can do it in Colombia, it can happen anywhere."*

Alan Weisman is author of *'Gaviotas: A Village to Reinvent the World'*, published in 1998 (see publication list). *Gaviotas: Centro Gaviotas, Paseo Bolivar #20-90, Bogota, Colombia*
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Trends in Donor Policy on Sustainable Energy

Michael Kvetny, *INFORSE Secretariat*

Global Agenda

Since the 1992 Earth Summit in Rio de Janeiro, there has been a remarkable change in the *Global Agenda* regarding energy demand and environment. Governments, international organisations, and donors now recognise that:

- The increasing demand for energy services has a negative impact on the environment unless adequate measures are taken to reduce or avoid these impacts;
- The rising population in most developing countries will result in a rapid growth in the demand for basic energy services such as heating, lighting, and transport;
- The rising income in developing countries will lead to increased demand for access to services such as electric lighting, radio, television, refrigeration, and telecommunication.

UN and World Bank

The United Nations and the World Bank, as the leading international development organisation and development bank, respectively, have introduced a *New Energy Agenda* during the 90s. Several documents and new funding schemes show an understanding that a wide range of measures is needed, comprising improved energy efficiency, fuel switching, and increased use of renewable-energy sources. The UNDP has launched the "Initiative on Sustainable Energy", along with the 1995 report "Energy as an Instrument for Socio-Economic Development" and the 1997 document "Energy after Rio, Prospects and Challenges". In 1996, the World Bank published "Rural Energy and Development, Improving Energy Supplies for Two Billion People", and in July, 1997, the Bank presented the draft paper "Energy and the Environment Strategy".

New Energy Agenda

The *New Energy Agenda* recognises that biomass for many years will continue to be the energy source used by low-income households. Sustainable use of biomass therefore will be a fundamental measure

to ensure a sustainable use of energy in developing countries. The Agenda further recognises that technologies to utilise renewable energy sources now have matured technically as well as commercially.

Market Barriers

However, the market for renewable energy technologies does not emerge easily. There are many barriers to take in mind when new products are introduced. For years, NGOs have been involved in development and dissemination of renewable technologies and improved stoves. Unlike the situation in the developed world renewable technology has its primary target group among poor, rural households. During the 1980s and the first half of the 1990s, the goal was to demonstrate the technical feasibility and to develop reliable, competitive products. Now, the focus is changing towards marketing and operations.

Information Campaigns

There must be an incentive for consumers to procure new technology. There will be a need for information campaigns on renewable energy. Consumers of energy services need to be convinced of the benefits of the new product, i.e., that it is reliable, is cost-saving, and provides greater comfort. Local and national governments need to be convinced that use of renewable-energy technologies will support local and national development objectives.

Co-operation Models

There will be a need for co-operation models to ensure a market large enough to attract suppliers that can guarantee proper maintenance and access to spare parts. Normally, a supplier will extend its market from more profitable urban areas into rural areas. However, the attractive urban market will be supplied with modern energy such as grid-connected electricity or LPG (bottled cooking gas). Rural areas are sparsely populated. One supplier cannot cover a large geographic area with skilled experts on a commercial basis when services are demanded within short times. The result will be in-

sufficient maintenance, unreliable output, dissatisfied customers, and diminishing demand. Co-operation on the local level will be a precondition for the dissemination of renewable-energy technologies and access to modern energy services.

Funding Mechanisms

There will be a need for financial mechanisms to connect financial institutions with private firms and customers. Many households do not have the financial capacity to purchase a product with a higher up-front cost, even though operating costs are lower. Only a few banks have shown interest in renewable technologies. The customers are too small and the loan terms are too long when the annual payments must be supported by household budgets. The risk is high, and there is no collateral valuable to the bank.

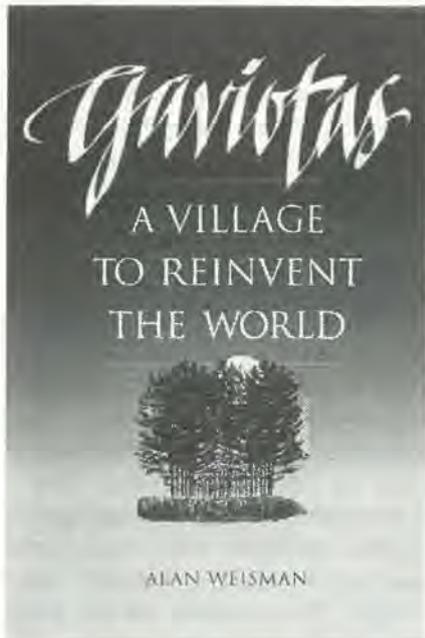
NGOs and CBOs as Intermediaries

National governments as well as international development banks and donors are looking for new approaches and intermediaries to demonstrate that renewable-energy services can be disseminated on a commercial basis even in sparsely populated areas when local people co-operate. These intermediaries shall:

- Prepare and implement awareness-raising and information campaigns.
- Develop and promote co-operation models to attract suppliers and funds.
- Collect description of experiences so these co-operation models can be replicated.

Non-Governmental Organisations (NGOs) and Community-Based Organisations (CBOs) can function as intermediaries between suppliers and funding institutions on one side, end-users on the other. They represent end-users of energy services and can ensure local participation in the process of planning energy supplies for rural areas. Representing many end-users, the NGOs and CBOs can develop co-operation models for low-cost funding and for reliable maintenance of equipment. Furthermore, most NGOs and CBOs have experience in awareness-raising and information campaigns.

Publications



Gaviotas: The Village to Reinvent the World

A hopeful environmental success story in a challenging environment in the war-raged Colombian savanna. A village sustain itself by introducing several inventions: wind generators that converts the light savanna winds into electricity, super-efficient pumps to provide fresh water, solar boilers to heat and sterilize water and many others. An inspirational book. See article on page no. 16. By Alan Weisman. 240 pages, maps, illustrations, photos, 22.95\$ +5\$ shipping.

Contact: Chelsea Green Publishing Co., PO Box 428, White River Junction, Vermont, VT 05001, USA. Ph: +1-802-295-6300, fax: +1-603-448-22576.

Order toll free: +1-800-639-4099, <http://www.chesegreen.com/>



Agenda 2000

Will it increase nuclear safety in Eastern Europe? Will Eastern Europe remain a nuclear time-bomb?

EU's enlargement program "Agenda 2000" 1997, EU's history, nuclear power history, nuclear aid, EUROATOM agency. What needs to be done? Close of the high risk reactors.

Special edition of the WISE Biweekly Publication. WISE is an Anti-nuclear NGO. 1998. 33 pages.

Info: WISE, World Information Service on Energy, PO Box 59636, 1040 LC Amsterdam, The Netherlands. Ph: +31-20-612-6368, fax: +31-20-689-2179, e-mail: wiseamster@antenna.nl, <http://antenna.nl/~wise>.



Climate Action Network International NGO Directory 1998

4th Edition, 263 NGO Members in 74 countries.

Contact: Climate Network Europe, 44 rue Taciturne, 1000 Brussels Belgium. Ph: +32-2-231-0180, fax: -2-230-5713, e-mail: canron@gn.apc.org, <http://www.climatenetwork.org>.



Energy Efficiency Initiative - Europe

- Volume 1: Policy Analysis
- Volume 2: 54 Country Profiles and 47 Case Studies

Prepared for the European Environmental Ministers Meeting in Aarhus 1998. Published by OECD/IEA, International Energy Agency with the Danish Energy Agency of the Ministry of Environment and Energy. 678 pages.

Info: IEA Publications, 149 Tottenham Court Road, London W1P 9LL, UK. Ph: +44-01718962241, fax: +44-0171-8962275.

Copies from the Danish Ministry are available in a limited number.



Sustainable Energy Successes in Central & Eastern Europe

20 Sustainable energy project described each on 1 page with a photo, contact address. Collected by NGOs from the INFORSE network in cooperation with the European ECO Forum Energy and Climate Group. 32 pages, 1998.

Contact: INFORSE-Europe / OVE, Organisation for Renewable Energy, Gl.Kirkevej 56, DK-8530 Hjortshøj Ph: +45-86-227000, fax: -86-227096, e-mail: ove@inforse.dk, <http://www.inforse.dk/>

Periodicals

Renewable Energy World

A magazine from the publisher of the Annual World Directory of Renewable Energy Suppliers and Services.

Vol.1, Nr.1. July 1998, pages 64. Gratis for professionals.

Contact: Edward Milford, James & James Science Publisher Ltd., 35-37 William road, London NW1 3ER, UK.

Ph: +44-171-387-8558,

fax: +44-171-387-8998,

e-mail: rew@jxj.com,

<http://www.jxj.com>.

CSE Briefing Paper and Statement

No. 1 The Kyoto Protocol, What it says?
No. 2 Politics in the Post-Kyoto World Statement: The Atmospheric Rights of all People on Earth.

Why is it necessary to move towards the 'ultimate objective' of the Framework Convention on Climate Change?

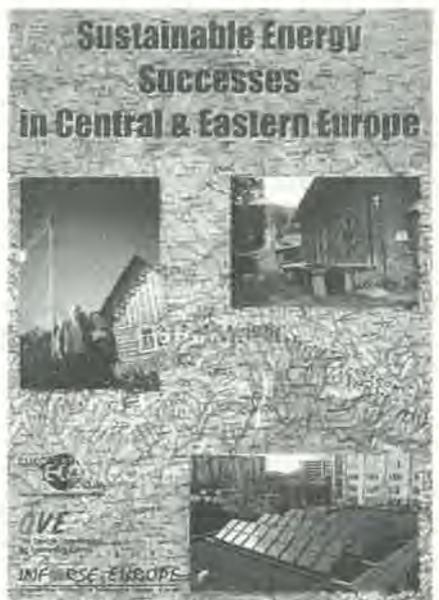
Contact: Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi - 110062, India.

Ph: +91-11-6981110,

fax: +91-11-6985879,

e-mail: cse@sdalt.ernet.in,

<http://www.oneworld.org/cse>.



Events

★ Event with INFORSE participation

September 14-16, 1998

Business and Investment Seminar for Renewable Energy in Latin America, Quito, Ecuador

Org. by Adame (France), UNESCO (Spain), INECCEL (Ecuador), et. al. in the framework of the World Solar Program.
Info: att David Castello, Institut Catala d'Energia (ICAEN), Avda. Diagonal, 453 bis Atic, 08036 Barcelona, Spain. Ph: +34-93-4392800, fax: +34-93-4306329, e-mail: icaen@icaen.es

September 14-17, 1998

EuroSun '98, 2nd ISES-Europe Solar Congress & Exh., Portoroz, Slovenia

Info: E-NET - Centre for Efficient Use of Energy, 1000 Ljubljana, Ambrozevtrg 5, Slovenia. Ph: +386-61-1729284, fax: -1729283, e-net@siol.net.

September 20-25, 1998*

WREC '98, Florence, Italy

World Renewable Energy Congress

Info: A.A.M. Sayigh, World Renewable Energy Network, 147 Hilmanton, Lower Earley, Reading RG6 4HN, UK. Ph/fax: +44-118-961-1364/-1365, e-mail: asayigh@netcomuk.co.uk.
See article on AIWC workshop on page no. 9.

September 21-23, 1998

Improving Electricity Efficiency in Commercial Bldg, Amsterdam, NL.

Conf. and Workshop. Org. by NOVEM.
Info: ROSTRA, Birgite Wildenburg, Ph: +31-70-3648703, fax: -3562878, rostra@euronet.nl., <http://www.novem.org/events/ieecb>

September 25-27, 1998

European Conference on Nuclear Phase Out, Vienna, Austria

EU enlargement. Limited support for NGOs! Org. by Global 2000 in cooperation with AAI, Greenpeace, Austria.
Info: Global 2000, Oliver Butz, Ph: +43-1-812-573041, fax: -812-5728, global2000@t0.or.at, <http://www.t0.at/~global2000>.

September 30 - October 2, 1998

3rd European Wave Energy Conference, Patras, Greece

Franzius-Institute, Un. of Hannover, Nienburger str. 4, 30167, Germany. Ph: +49-511-762-2573, fax: -762-4002, dursthoff@fi.uni-hannover.de.

October 6-8, 1998

EEBW '98, Prague, Czech Republic

6th Energy Efficiency Business Week International Conference and Exhibition
Info: SEVEN, Slezska 7, 120 56 Prague 2, Czech Republic. Ph: +420-2-24247552, fax: -2424-7597, e-mail: seven@ecn.cz, <http://www.ecn.cz/seven>.

October 8-9, 1998

Making Info. Technology Work for Renewable Energy, Birmingham, UK

Info: Julie Belsten, The Franklin Company, 192 Franklin Rd, Birmingham, B30 2HE, UK.
Ph: +44-121-459-4826, fax: +44-121-459-8206, e-mail: ifs@tfc-bham.demon.co.uk, <http://www.demon.co.uk/tfc/ifs.html>.

October 12-14, 1998

RETRUD '98, Kathmandu, Nepal

Int'l Conf. on Role of Renewable Energy Technologies for Rural Development
Info: ISES-Nepal Section, Alternative Energy Promotion Center, Institute of Engineering, PO Box 1175, Kathmandu, Nepal. Ph: +977-1-521531, fax: +977-1-521985, ises@npl.healthnet.org.

October 12-14, 1998

PV in the City of the Future, Nieuwland 1 MW PV Project, NL

European Workshop
Info: M Schreurs, Ecofys, Ph: +31-30-2808300, fax: -2808301, pv.CityoftheFuture@Ecofys.nl.

October 14-16, 1998

International Renewable Energy Conf. and Exhibition, Tokyo, Japan

Info: Nikkan Kogyo Shimbus Ltd, Int. Division of IRECE, 1-8-10 Kudan-Kita, Chiyoda-ku, Tokyo, Japan. Ph: +81-3-3370-2710, fax: +81-3-3370-9797, e-mail: renewcon@mb.infoweb.ne.jp.

October 14-16, 1998

REAP '98, Shanghai, China

Renewable Energy and Energy Efficiency Asia-Pacific Conf. & Exhibition
Info: ADA, Alternative Development Asia Ltd., 1406 Leader Commercial Building, 54-56 Hillwood Road, TST, Kowloon, Hong Kong. Ph: +852-2574-9133, fax: +852-2574-1997, e-mail: office@adal.com, <http://www.adal.com/>.

October 20-22, 1998

International Conf. & Exhibition on Renewable Energy & Energy Conservation for Buildings, Shanghai, China

Org. by China Energy Research Society and Shanghai Commission on Energy, China Chamber of Commerce, et.al.
Info: Rm. 1322, Bldg. 3, 1486 Nanjing Rd. (W), Shanghai 200040, P.R. China. Ph: +86-21-62479796, fax: -62049481, wjyao@online.sh.cn.

October 20-23, 1998

2nd European Energy Clubs Conference, Flanders Expo, Ghent, Belgium

Info: Water-Energik-vLario, Marktplein 16, B-2110 Wijnegem, Belgium. Ph: +32-3-3537253, fax: +32-3-3538991, e-mail: wel@club.innet.be.

November 2-13, 1998*

COP4, Buenos Aires, Argentina

Info: UNFCCC, Po Box 260124, 53153 Bonn, Germany. Ph/fax: +49-228-8151000/-1999, e-mail: secretariat@unfccc.de. (See article pg. 4).

November 18-19, 1998

Regional Workshop on Income Generation Through PVs, Auroville, India

Info: Sumedha Ekanayake, E-net, 5 Lionel Edirisingha Mawatha, Kirulapone, Colombo 5, Sri Lanka. Ph: +941-852149, fax: +941-856188, e-mail: hydro_enet@itdg.lanka.net.

November 18-20, 1998

International Congress on Sustainable Energies, Chile

Organised by ACHESA, Chilean Association for Sustainable Energies.
Info: SENESE X, CERE/UMAG, att. A. Kunstmann, Casilla 113-D, Punta Arenas, Chile. Fax: +56-61-207184, cere@ona.fi-umag.cl, <http://members.xoom.com/senesel/>.

November 19-21, 1998

EPIC '98, France

2nd European Conf. on Energy Performance and Indoor Climate in Building

Info: Laboratoire des Sciences de l'Habitat, CNRS D 1652, Ecole Nationale des Travaux Publics de l'Etat, Ph: +33-4-7204-7027, fax: +33-4-7204-7041, e-mail: secretariat.lash@entpe.fr.

November 19-21, 1998

ENERGEX '98, Manama, Bahrain

7th Int'l Energy Conf. & Exhibition.

Info: CMDC-WSEC, World Sustainable Energy Coalition, POB 928, CH-8055 Zürich, Switzerland. Fax: +411-463-0252, e-mail: icecag@zig.ch

November 26-27, 1998*

ISREE-6, New Delhi, India

6th International Symposium on Renewable Energy Education. Organised by IASEE, ISES, TERI, SESI.

Info: TERI, Darbari Seth Block, Habitat Place, Lodhi road, New Delhi 110003, India. Ph: +91-11-4622246, fax: +91-11-4632609, e-mail: akmsira@teri.res.in, <http://www.teriin.org>
See article on AIWC workshop on page no. 9.

November 26-27, 1998

5th Annual COGEN Europe Conf. and Exhibition, Brussels, Belgium

Info: COGEN, The European Association for the Promotion of Cogeneration, rue Guldelle 98, 1200 Brussels, Belgium. Ph: +32-2-7728290, fax: -2-7725044, Cogen_Europe@compuserve.com.

November 30 - December 11, 1999 *

COP2, Convention to Combat Desertification, Dakar, Senegal

Info on the NGO activities: ENDA, Dakar, Senegal. INFORSE-Regional Coordinator. See address on the back page and see article on page no. 3.

February 1-3, 1999

Energy Storage Technologies & Systems, Indore, India

Info: D. Buddhi, School of Energy and Environment Studies, Devi Ahiya Un., Indore 452 001 India. Ph: +91-731-460309, fax: +91-731-470372.

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Fax: +66-2-434 3253
E-mail: rural@alpha.tu.ac.th
att. Sumiang Natakuaotong

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att. Roque Pedace

INFORSE Strengthens Links to United Nations

At its 1998 substantive session, the UN Economic and Social Council (ECO-SOC) has granted INFORSE special consultative status.

This enables INFORSE to designate official representatives to the United Nations Headquarters in New York, as well as to the UN offices in Geneva and Vienna.

In addition, INFORSE and its member organisations can be accredited for a number of UN meetings and conferences, submit written statements on areas in which INFORSE has special competence, and, in general, interact with a wide range of UN organisations.

INFORSE already co-operates with a wide range of UN organisations, such as UNDP and UNESCO, but so far mainly on an ad-hoc basis. The new consultative status will strengthen INFORSE's ability to influence the global agenda for sustainable energy, as well as to convey the experience and vision of local communities to the global level.

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