



## ENERGY + SUSTAINABLE DEVELOPMENT

A Newsletter of  
UCCEE and UNEP  
December 2002

### WORLD SUMMIT

## Highlights Role of Energy in Sustainable Development

Energy issues featured prominently in discussions during the recent World Summit on Sustainable Development (WSSD) in Johannesburg, particularly the link between energy and sustainable development and the critical role energy plays to reduce poverty and improve environmental quality.

UNEP Energy Programme manager, Mark Radka, who attended the Summit, says energy issues are specifically noted in the WSSD Plan of Implementation and closely linked to outcomes on transport and its role in sustainable development. The WSSD Plan of Implementation, for example, recognizes the critical need to bring energy services to the poor as a means to achieve the Millennium Development Goals.

Radka notes that many of UNEP's projects and activities "lie solidly" within the WSSD outcomes and validate the organization's approach to energy and sustainable development, including the various Rural Energy Entrepreneur Development (REED) initiatives. These initiatives, underway in seven countries with United Nations Foundation support, are helping to improve access by the rural poor to environmentally sound energy services (see "Publications" section for info on a new REED report).

One of the issues thwarting a proposed WSSD agreement on renewable energy targets was the lack of credible information about current global renewable energy use and potential. As a result, UNEP intends to expand its environmental assessment efforts to cover renewable energy resources. "The comprehensive and collaborative effort being planned is one where developing country institutions will figure prominently," Radka says.

A compelling theme in WSSD outcomes is the need to improve financing for renewable energy and energy efficiency projects, particularly in developing countries. Along these lines, UNEP is a main partner in the Italian Government's Type II initiative promoting markets for renewable energy in the Mediterranean region. This effort builds directly off UNEP's strong clean energy finance programme and the organization's relationships with the financial sector.



## Global Network Supported

The Global Network on Energy for Sustainable Development (GNESD) was officially launched at the World Summit. The Network is an important Type II initiative to promote sustainable development through policies and solutions that expand access to environmentally sound energy services.

UCCEE Director John Christensen, who also attended WSSD, says the GNESD will link established centres of excellence and coordinate joint activities on information exchange, analytical studies, policy support, and capacity building. „Network partners will help promote the research, transfer, and acceptance of cleaner energy technologies in the developing world," he says.

A small secretariat to support the Network has been created and will be headquartered at Risø as a separate unit next to UCCEE. Prof. Thomas Johansson, who helped to develop the network concept, will co-chair the network steering committee with Prof. Ogunlade Davidson, Director of the Energy and Development

Research Centre (EDRC) at the University of Cape Town.

One of the first activities of the GNESD is the formation of a working group focused on energy access issues for the poor, including both household energy use and energy for commercial uses. Under the working title of *Policy Options for Cleaner Energy Services for the Poor*, the group's primary objective will be to identify viable and proven policy options that encourage cleaner and more sustainable energy services to the world's poor amidst a rapidly reforming energy sector.

The Working Group will also focus on aspects of financing for new cleaner energy services and will present their results at the first annual partner assembly in mid 2003.

A dedicated web site for the GNESD is placed at: <http://www.e4sd.net>. Further information is available at <http://www.uneptie.org/energy/act/gnesd/index.htm>

## *New Finance Opportunities for Indian Solar Home Systems*

One of the main barriers to the development of markets for clean energy is access to finance. As part of continuing efforts by UNEP and UCCEE to address this barrier and promote innovative options to finance clean energy services, a new project was approved in July.

*Financing Indian Solar Home Systems* is a four-year project to accelerate the market for credit finance of photovoltaic solar home systems (SHS) in the southern Indian state Karnataka. Funded primarily by the United Nations Foundation (UNF), the Project is a partnership between UNEP, UCCEE, and two of India's major banking groups with a reputation for innovative financial products - the Syndicate Bank and the Canara Bank.

Although the market for SHS in rural India is growing, only 10-15 percent of rural households and enterprises can afford to pay cash for such systems. Consequently, most rural people cannot pay the initial cost for a more modern energy system without credit - even though such a system could supply electricity during the next twenty years at a cost that is often much cheaper than other alternatives. Although India does have a well-developed rural banking sector with the potential to lend for such systems, the link between this sector and the renewable energy industry is still tentative.

UCCEE's Jyoti Painuly says the overall aim of the project is to develop a credit facility to help Indian banking partners develop lending portfolios specifically targeted at financing solar home systems in regions of Southern India currently served poorly by conventional financial institutions. The project will use UNF resources to buy-down the cost of financing a SHS at the retail level - in effect, providing a subsidy that lowers the effective interest rate on a loan taken by a customers to purchase a system.

"This relatively new approach differs from the traditional programme of capital cost subsidies to purchase systems, which we hope will be more effective at avoiding price distortions while sustainably developing the market," Painuly says.

Painuly explained that bankers are generally enthusiastic about the possibility of offering low interest rates to their customers, but they are also unfamiliar with PV technologies and the costs to purchase and install a solar home system. An interest subsidy, he says, lowers the risk to the banks and helps them to develop solar financing portfolios without significantly distorting the price for solar home systems. UCCEE is also helping the banks by drawing up SHS specifications and carrying out vendor qualifications to ensure supply of quality products and reliable after sale services.

The effective interest rate to be paid by SHS customers under the Project is currently targeted at 5%, which is 5-8% below the normal 12-14% per annum rates charged by banks for such loans. Theoretically, a fund of US\$1 million could provide interest subsidies to purchase almost 20,000 solar home systems.

One of the main differences in this approach is an inherent design to make concessional finance unnecessary once the barriers faced by mainstream financial institutions - such as perceptions the technology will not work as designed - have been addressed and solar customers have proven their credit-worthiness.

The Project will also develop a network with a number of

# *Sustainable Energy Finance*

institutions, including the Indian Government's Ministry of Non Conventional Energy Sources (MNES) - an apex Indian government body promoting renewable energy, which is launching a similar programme to promote SHS in a number of Indian states.

UNEP and UCCEE will also liaise with other institutions in India to develop policy guidelines that encourage banks to offer loans for the purchase of an SHS and also to provide the platform to communicate financial ideas and support to banks and other financial institutions. UNEP support includes sponsoring joint workshops with these agencies to share knowledge and promote SHS to the financial community.

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## *World Bank and UNEP Pursue Energy Efficiency In Brazil, China and India*

UNEP and the World Bank have embarked on an ambitious project to achieve a major increase in energy efficiency investments by the domestic financial sectors in Brazil, China and India. With financial support from the United Nations Foundation (UNF), the Project is developing the capability of new and existing financial institutions to package energy efficiency investment projects by removing market barriers in each country.

Project activities include technical assistance, training, and applied research in four areas:

- developing commercial banking opportunities for energy efficiency
- supporting Energy Service Companies (ESCOs)
- creating guarantee funds for energy efficiency
- developing equity funding for ESCOs/energy efficiency projects.

As one of the Project activities, international exchanges will allow financiers from each of the three countries to learn from each other and jointly address the practical problems each face overcoming barriers to increased investments in energy efficiency.

At a recent workshop, clear evidence was provided that barriers to increased development of energy efficiency are similar among countries, even though the underlying causes may be quite different. However, the action plans drawn up by the country teams indicate that measures to overcome barriers are unique to each country due to different energy sector conditions, financial sector status, and institutional and regulatory mechanisms.

UCCEE will work jointly with the World Bank and the three country teams in the coming months and will also be responsible for disseminating information, organising four cross-exchange workshops and conducting a final project workshop.

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## B-REED

# „Getting Down to Business“



After several successful market opening events, the Rural Energy Enterprise Development (REED) effort in Brazil, B-REED ([www.b-reed.org](http://www.b-reed.org)), is getting down to the business of developing new clean energy business in Northeast Brazil. At entrepreneur training sessions during August in the towns of Salvador, Bahia and Maceio, Alagoas over thirty entrepreneurs spent two days developing business plans and learning how to structure their new businesses using both AREED's Toolkit (which has been translated from English into Portuguese) and innovative computer software developed in Brazil called, appropriately, „Make Money“. The entrepreneurs were invited to the workshops based on their participation at the market opening events.

E+Co an American NGO, is assisting there with the implementation of B-REED. The E+ Co manager, Gina Rodolico, says the program is on track to make its first two investments before the end of the year. At the same time, she cautions that although the overall attitude is positive, progress can often be slower than expected. „Some of the entrepreneurs are already running a business, so to think about a new strategy is time consuming,“ she says. Rodolico noted that B-REED's local partners, BRASUS and Instituto Eco-Engenho, have been instrumental in the success of training programmes and in helping entrepreneurs to progress.

Since the training sessions, three prospective businesses have been selected to undergo the „due diligence“ process before financing is advanced. These businesses include:

- \* Hot Sat, an established equipment supplier selling solar PV systems on a cash basis. The company is seeking B-REED capital to provide short-term credit to customers for PV-powered water pumping and home power systems.
- \* Ceramica Banderias, the largest brick and tile manufacturer in Alagoas. The company needs capital to establish a local fuel supply based on eucalyptus wood, coconut shells or elephant grass.
- \* Operarias do Mel, an existing business that purchases, packages and markets pollen. The company wants B-REED support to expand and use solar thermal dryers for dehydration, solar ovens to melt wax in the beehives (to be reused or sold commercially) and solar PV freezers to kill fungus and bacteria.

Rodolico says B-REED continues to expand with another market opening seminar in Fortaleza hosted in late November and co-financed by USAID. Six additional training sessions for new entrepreneurs are slated for 2003.

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## Capacity Development advances

Under the Dutch funded UNEP/UCCEE project, Capacity Development for CDM, several activities during the past quarter have advanced the goal of enhancing the institutional capacity of twelve countries to benefit from participating in the CDM. The twelve focal countries of the project are Bolivia, Ecuador, Guatemala, Côte d'Ivoire, Uganda, Mozambique, Egypt, Morocco, Jordan, Vietnam, Cambodia, and the Philippines.

Currently all countries in the project are in the process of developing a detailed work plan for the next three project implementation years, and this process is supported by regional centres and UCCEE staff. National workshops and regional meetings will be held from November 2002 to January 2003.

The project will include development of popular information material about the CDM that is targeted to meeting the needs of a broad range of decision makers. This will be supported by more detailed technical material about the CDM project cycle and specific issues of relevance to project assessment and implementation. The first product of this work is a popular booklet about CDM.

At an October workshop regional representatives and UCCEE staff identified priority areas for the next year's methodological activities. UCCEE's Myung Lee says that the workshop participants explored a wide range of



issues before settling on four initial working areas:

- CDM project cycle
- Baseline scenarios
- CDM and sustainable development policies
- Legal and institutional project implementation aspects.

UCCEE's Kirsten Halsnæs argued that the CDM should be seen as an option for combining global climate change policy objectives with local development needs in terms of sustainable development policies. There can be several positive linkages between CDM projects and sustainable development, and a way to gain these potential co-benefits is to consider how CDM might link to general domestic or foreign investments activities.

Workshop discussion also considered how specific institutional frameworks for CDM management could facilitate the establishment of local partnerships with various stakeholders including the private sector. In his presentation UCCEE's Jørgen Fenhann suggested developing standards for baseline and project assessment that can support countries in their preparation of CDM project-approval documents for the CDM Executive Board.

[www.CD4CDM.org](http://www.CD4CDM.org)

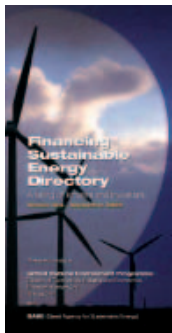
## Open for Business: Entrepreneurs, Clean Energy and Sustainable Development.



UNEP, Dec 2002. This 36-page booklet describes the "enterprise-led development model", the heart of the UNF-funded Rural Energy Enterprise Development Programme (REED) operating in five African countries, Brazil, and China. ([www.unepnie.org/energy/publications](http://www.unepnie.org/energy/publications))

## Introduction to the CDM

UCCEE, August 2002. This 30-page booklet introduces the CDM in easily accessible language and describes possible national benefits and options for developing countries. The booklet also includes a set of project examples to illustrate general principles.



## Financing Sustainable Energy Directory

UNEP and BASE, September 2002. The Directory is an inventory of lenders and investors that provide finance to the sustainable energy sector. The Directory is aimed at helping investors, project developers and entrepreneurs find capital providers to finance projects in the renewable energy and energy efficiency sectors. ([www.unepfi.net/fsed](http://www.unepfi.net/fsed)).

## AIRIMPACKTS

### Website Expands

In September, the working group of the AIRIMPACKTS website ([www.airimpacts.org](http://www.airimpacts.org)) met at the offices of the US Environmental Protection Agency in Washington D.C. to review the status of the site and to discuss future steps.

AirImpacts.org - an international initiative funded by UNEP and led by UCCEE - is designed to increase global awareness and research on the environmental health impacts of air pollution and facilitate information exchanges between experts and policymakers.

Representatives at the meeting discussed the need for additional funds to maintain the website, new recruitments, marketing strategies to increase its visibility and a potential collaboration with the Clean Air Initiative of the World Bank and Asian Development Bank.

As one measure to increase the website's visibility, 500 compact disks with an off-line version of the web site were distributed at COP8 in New Delhi during October.

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## WE WELCOME

### New Staff

Romeo Pacudan joined the centre as Senior Economist in Sept. 2002. Prior to that, he was a Senior Energy Expert at the Asia Regional Office of the CERF/IEEC (Civil Engineering Research Foundation/Internat. Institute for Energy Conservation) in Bangkok, Thailand, and an Assistant Professor in Energy Economics and Planning at the Asian Institute of Technology, Bangkok. Pacudan holds a PhD in applied economics from the University de Grenoble, France.

Signe KR Caspersen, Economist, holds a M. Sc. in economics from the University of Copenhagen. She has specialised in environmental economics and statistics. At the centre she works in the field of sustainable development and climate change.

Per Kolbeck has been temporary employed as Programme Officer at the newly established Secretariat for the Global Network on Energy for Sustainable Development (GNESD) placed alongside the UNEP centre. He holds a M.Sc. in international technology planning and has earlier worked with knowledge dissemination and global networking at IEA's CADDET and GREENTIE secretariat in Denmark.

E+ also welcomes two new PhD students to UCCEE. Karen Olsen from the Institute for Development Studies at Roskilde University will be involved in the Capacity Development for the CDM Project with her thesis „Institutional Issues in the Implementation of Sustainable Development and Climate Change Policies in Developing Countries“. Stéphanie Robert will be associated with both Université Paris VII and the Institute for Development Studies at Roskilde University to work on a thesis titled "Energy Access in Western Africa, with a Special Focus on Women".

E+ provides information on the activities at UCCEE and UNEP. The views expressed here do not necessarily represent those of UNEP, Risø National Laboratory or Danida. Back issues can be found at [www.uccee.org/newsletters.htm](http://www.uccee.org/newsletters.htm). To receive an electronic or printed copy of E+, please register on our website [www.uccee.org](http://www.uccee.org) or contact Maria Andreasen ([maria.andreasen@risoe.dk](mailto:maria.andreasen@risoe.dk)) at the UCCEE number below. For all other information or comment, please contact the editor, Stine Skipper ([stine.skipper@risoe.dk](mailto:stine.skipper@risoe.dk)).

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