

## ENERGY, CLIMATE AND SUSTAINABLE DEVELOPMENT

*A Newsletter of  
URC and UNEP  
May 2004*



## *UNEP and URC Gear Up for Bonn Conference*

The upcoming International Conference on Renewable Energies in Bonn early June is an important post-World Summit on Sustainable Development (WSSD) event for those working in renewable energy, as well as, an important opportunity for UNEP and URC to present some of the present activities and contribute to the global dialogue with a strong international forum focusing on renewable energy.

As part of their contribution, UNEP and URC staff have been working with developing countries to help their representatives prepare for the Conference. Their work includes organizing or contributing to regional meetings in Latin America, Asia, West Asia, and Africa, and preparing background papers on renewable energy, drafting statements, and making presentations on the main issues in Bonn.

UNEP has been requested by the conference organizers to be responsible for two of the special "thematic" background papers that have been prepared in preparation for the event. The first paper deals with sustainable energy finance and the second addresses needs and approaches to increase the capacity of developing countries to deal with renewable energy and sustainable development.

In addition to the Thematic Background Papers, UNEP and URC staff have also prepared regional background papers for the preparatory conferences held for the African, Asian and Arab regions. The Asia-Pacific paper is focused on renewable energy in a region, which has experienced robust economic growth, huge increase in the number of population and rapid growth in energy consumption in the past two decades. Despite this impressive economic growth, more than

one billion people have no access to clean and affordable energy services. The paper reviews policies that level the playing field for renewable energy, internalize external costs, provide specific and targeted incentives for market development of renewable energy, and situate the current approaches adopted in Asia and the Pacific countries.

UNEP and URC will also be very active at the Conference with contributions to a number of events and a stand in the exhibition hall.

UNEP's Mark Radka says UNEP's Sustainable Energy Finance Initiative, or SEFI, ([www.sefi-unep.org](http://www.sefi-unep.org)) will be the cornerstone of the finance theme at the Conference with special sessions on June 1 and 2. "This part of the conference offers a good opportunity to pull together a finance community intrigued by renewable energy, while giving SEFI momentum," he says.

The Global Network on Energy for Sustainable Development (GNESD, [www.gnesd.org](http://www.gnesd.org)) will also host a side event. The aim of the event is to present the results of the first theme of the GNESD working group: 'Energy Access'. Presentations will focus on the role that renewable energy can play in providing better access to modern energy for the poor. Head of GNESD Secretariat, John Christensen, says the Conference provides an ideal opportunity for GNESD to present the first results of its work, with recommendations from the meeting helping to guide future work.

Both Radka and Christensen are optimistic the Conference will heighten the awareness of renewable energy and energize efforts to develop renewable energy resources among a wider group of people, institutions, and businesses.

**Contact:** Mark Radka, UNEP,  
Tel: +33 (0)1 4437 1427,  
Email: [mark.radka@unep.fr](mailto:mark.radka@unep.fr)

### **REED to Feature on BBC Ahead of Bonn Conference**

UNEP's Rural Energy Enterprise Development (REED) Initiative will be featured on the BBC's *Hands On* series. Currently in production and scheduled for screening just prior to the Bonn Renewable Energy Conference in June, the half hour programme will feature footage from China, Brazil, and Africa on new clean energy enterprises, and interviews with their entrepreneurs. The programme is a good opportunity to see the enterprise-led development and the REED approach.

# Climate Change, Vulnerability, and Development

As the climate changes, how vulnerable are human, plant, and animal communities?

This question lies increasingly at the centre of the climate change debate, as studies document not only changing levels of climate outcomes (such as rainfall, winds, and temperatures), but also how climate change influences the variability of these outcomes.

URC's Jesper Kühl explains that recent meteorological research can relate the occurrence of extreme weather events to a climate regime with increased variability. Extreme events are a feature of the characteristics and impacts of climate change and highlight how variability and vulnerability can change, he says.

Kühl, who is completing a PhD at URC, says vulnerability can be summarized as the interface between exposure to physical threats to human well-being, and the capacity of people and communities to cope with those threats. Vulnerability thus represents the combination of the variability and strength of environmental impacts and the coping capabilities of countries, institutions, and individuals. In a shorthand formula, the relationship can be represented as:

## Vulnerability = Hazards - Coping capacity

In this relationship, hazards are a function of the probability of extreme events, their extent and duration, and their predictability. The coping capacity is a function of the information available, options affected parties can pursue (such as insurances, diversified activities, markets, etc.), as well as public actions to warn, adapt to, and deal with risks.

According to an IPCC report in 2001, the predicted effects of climate change differ significantly across regions and countries of the world. People in tropical and sub-tropical developing countries are highly exposed to increased risks as the result of a heavy reliance on rain-fed agriculture and prevailing low standards of living. These people also lack substantial coping capacity because they have few economic resources and technology. This report ties a close association between general development issues and particular issues of mitigation and adaptation to climate change, Kühl says.

Vulnerability, he adds, can best be viewed through a *benchmark*. The World Food Programme, for instance, defines vulnerability as the probability of a household having a level of consumption below minimum survival needs. More broadly, vulnerability can be linked to a *poverty line* incorporating both nutritional and other basic needs.

Kühl cites the Horn of Africa as a region notorious for destitution and harsh climatic conditions. His research studied the composition and determinants of vulnerability across 15 villages in Ethiopia. Using time-series data on household characteristics and consumption, he found that

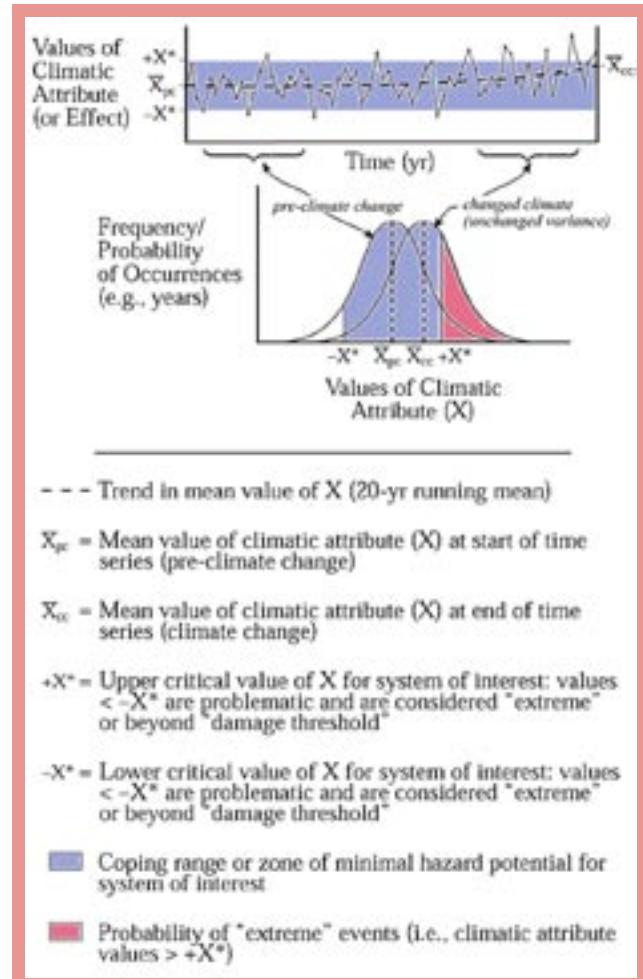
shocks and seasonal variations have a strong impact on household consumption.

"Overall vulnerability at the village level is concentrated among the poor, thus confirming the link between lack of resources and vulnerability. Older households and those headed by women are particularly exposed to risk, while households with members who are literate are found to be better at 'smoothing' their consumption."

Kühl also compared the results with external sources and concludes that his findings are consistent with evidence from qualitative research in the survey area, as well as with the household's own perceptions of risk and vulnerability.

Contact: Jesper J. Kühl, URC, Tel.: +45 4677 5116,  
Email: jesper.kuhl@risoe.dk

Figure 1: Climate Change Effects - Level and Variability



# CD4CDM *Moving to Full Implementation*

The UNEP Risø Project Capacity Development for the Clean Development Mechanism is moving into its full implementation stage with the establishment and consolidation of Designated National Authorities in six countries and the identification of potential CDM projects.

According to URC's Myung-Kyoong Lee, most of countries are making progress as planned and having training sessions for baseline development and Project Design Documents (PDDs). Egypt, Morocco, the Philippines and Viet Nam have already made a tentative list of potential CDM projects while other countries are getting into project identification stage.

Two events are notable in the first four months of this year. The first event was an extended CD4CDM regional workshop in Asia which was held in Cambodia from March 24-26. The workshop is cosponsored by the Institute for Global Environmental Strategies (IGES) which has recently initiated a new programme with the support of the Ministry of Environment of Japan called "Integrated Capacity Strengthening for the CDM (ICS-CDM)," to be implemented in four developing countries of Asia. The CD4CDM workshop's broad objectives were to share the experience and learning from CD4CDM activities, and to facilitate a South-South interaction for sharing experience and lessons. Participants from 18 Asian countries attended, including representatives from government ministries, private sector associations, and international/regional organizations. Participants have attended a number of workshop seminars, including; Updates on international CDM regulations; Policies, regulations, and markets for CDM institutional design; Requirements for integrating sustainable development and technology within the CDM; and training on baseline development. More information about the workshop can be obtained from Dr. Sudhir Sharma (sudhir@ait.ac.th, Tel: +66-2524-5423).

The second event was a two-day CDM Investment Forum in Marrakech, Morocco from April 21-22, 2004. The event, organised by Morocco's Ministry of Environment with support from the CD4CDM Project, had two key objectives: Firstly, to inform the international CDM community of the activities and steps taken by the Government of Morocco to create a CDM-friendly business and regulatory environment in the country. And secondly to create an opportunity for local CDM stakeholders to meet and exchange views and information with international and foreign CDM stakeholders who have interest in the CDM in Morocco, including potential buyers of certified emissions reductions.

The two-day forum consisted of three separate sessions: The first session presented the institutional and regulatory preparations Morocco has completed as part of its plan for becoming a major regional player in the CDM. The second session included presentations by representatives from multilateral and bilateral organizations interested in purchasing carbon emission reductions from developing countries, including Morocco. The representatives from eight Annex I governments made presentations which focused on their CDM strategies and currently available carbon fund these potential buyers are running to purchase Certified Emission Reductions (CERs) and/or invest in CDM projects. The third and last session included two parallel workshops. One workshop presented potential CDM projects in Morocco within the energy sector, while the other dealt with potential CDM projects within the solid waste sector. In both workshops, profiles of potential projects were presented by local project developers who were interested in various types of international partnerships. More information on the Marrakech event can be obtained from Mr. Ali Agoumi (agoumi@mtds.com, Tel: +212 3777 4788).

Contact: Myung-Kyoong Lee, URC, Tel: +45 4677 5168,  
Email: [mk.lee@risoe.dk](mailto:mk.lee@risoe.dk)

## New Project on Climate Policy beyond 2012

In a partnership with CICERO, Norway, URC is conducting an assessment of alternative policy frameworks to encourage global cooperation on climate policy. The project, initiated by the Climate Committee of the Nordic Council of Ministers, includes a specific focus on mechanisms to facilitate the implementation of cost-effective policies to reduce GHG emissions in all parts of the world.

"We are looking for new ideas on how future innovative international agreements can be established based on an integrated view of climate and broader economic development perspectives," says URC's Anne Olhoff. The project will involve close partnership and policy dialogues with various stakeholders from the development and climate change community.

More specific project activities include case studies of combined development and climate policies in India and South Africa. These will be used, along with a study of alternative climate change commitment systems (such as emission caps, taxes, and technology standards), as background material to a stakeholder dialogue workshop in October 2004.

"We hope the project will facilitate a better dialogue between climate negotiators and other relevant stakeholders, including Scandinavian countries, other European countries, and the USA, as well as developing countries," says Olhoff.

Contact: Anne Olhoff, URC, Tel: +45 4677 5172,  
Email: [anne.olhoff@risoe.dk](mailto:anne.olhoff@risoe.dk)

# Eventful Year for

The last twelve months have been an eventful and productive period for the UNEP/World Bank energy efficiency (EE) project. With funding from the United Nations Foundation, the project aims to remove market barriers in Brazil, China, and India to develop the capability of new and existing financial institutions to offer energy efficiency investment products. According to URC's Joyti Painuly, country teams have been busy promoting energy efficiency in a number of ways, including the development of investment frameworks. Highlights of the year include:

In April 2003, an Energy Efficiency Financing Roundtable was convened in Rio de Janeiro by the Brazilian team with participants from the banking industry, EE industry, and government institutions. Various issues such as market potential, and barriers to energy efficiency, energy pricing and banking environment in Brazil were discussed. Alternate models of funding energy efficiency, such as through venture capital / private equity and related regulatory issues were presented. The report "Financing Energy Efficiency Projects in Brazil" can be accessed at <http://3countryee.org/publ>.

Also in April 2003, a meeting was organized by the Chinese team to initiate pilot projects under a longer- term goal to provide innovative EE loans through domestic banks. The meeting was attended by delegates from banks, investment companies, venture capital companies, a guarantee company, and EE project suppliers. Proposals for several energy efficiency projects for consideration as pilot projects were submitted and discussed at the meeting. The participant banks from China appraised and analyzed the projects proposed by the participant companies and discussed possible financing structure and method for financing. The Chinese working group prepared a plan for the implementation of demonstration projects after the meeting.

In May 2003, the India team in New Delhi arranged a meeting attended by banks, ESCOs, energy efficiency equipment vendors, project developers, industry associations, and professionals. The purpose was mainly to create awareness on energy efficiency opportunities and exchange of views between various stakeholders.

Energy efficiency performance contracting was the subject of a workshop organized by the Brazilian team in Rio de Janeiro in August 2003. Conducted by Shirley J. Hansen, an international expert on ESCOs, the objective of the workshop was to discuss performance contracting issues related to ESCOs and activities to promote development of an energy service company (ESCO) industry in Brazil. A related document, produced by the Brazilian tem on the performance contracting of ESCOs The presentation can be accessed at the project site (<http://3countryee.org/PerformContract/index.htm>).

After a delay due to the SARS health alert, an international exchange of ESCOs from China, India and Brazil was held in China during November to share experiences, discuss ways to more effectively develop the market for EE products and services, introduce energy performance contracting, and implement energy efficiency projects. The lessons learnt by the India team can be accessed at the project web site (<http://3countryee.org/publications.htm>).

# Energy Efficiency Project



Report from other country teams will also be available in due course.

A project website (<http://3countryee.org/>) was created to disseminate information and share both project documents and progress with other stakeholders. Currently, documents and presentations related to the workshops in India and Brazil can be accessed at the site.



The country teams are now preparing for an international exchange in Brazil tentatively scheduled for May 2004. The meeting will help to develop commercial "windows" for EE financing by banks through discussions about appraisal criteria, financial structuring of loans, and other issues.

Contact: Joyti Painuly, URC, Tel: +45 4677 5167, Email:[j.p.painuly@risoe.dk](mailto:j.p.painuly@risoe.dk); or Juan Zak , URC, Tel: +45 4677 5137, Email: [juan.zak@risoe.dk](mailto:juan.zak@risoe.dk)

**E** provides information on the activities at URC 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.unepribose.org/newsletters.htm](http://www.unepribose.org/newsletters.htm). To receive an electronic or printed copy of **E**, please register on our website [www.unepribose.org](http://www.unepribose.org) or contact Maria Andreasen ([maria.andreasen@risoe.dk](mailto:maria.andreasen@risoe.dk)) at the URC number below. For all other information or comment, please contact the editor, Stine Skipper ([stine.skipper@risoe.dk](mailto:stine.skipper@risoe.dk)).

UNEP Risø Centre on Energy, Climate and Sustainable Development (URC), Risø National Laboratory, PO Box 49, DK 4000 Roskilde, Denmark Tel: +45 4632 2288, Fax +45 4632 1999, [www.unepribose.org](http://www.unepribose.org)

UNEP Energy Programme, Division of Industry, Technology and Economics, Tour Mirabeau 39-43 Quai Andre Citroen, 75739 Paris Cedex 15, France Tel: +33 (0) 1 4437 1474, Fax: +33 (0) 1 4437 1429, [www.uneptie.org/energy](http://www.uneptie.org/energy)

**E** is printed on 100% recycled, chlorine-free paper.  
Layout by Finn Hagen Madsen ([finn@studio8.dk](mailto:finn@studio8.dk))