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ENERGY, CLIMATE AND SUSTAINABLE DEVELOPMENT

A Newsletter of URC and UNEP
November 2004

Kyoto Protocol will come into force

After seven years of long and complicated negotiations since the world's governments met in Japan to set limits for emissions of greenhouse gases, the Kyoto Protocol will come into force early next year. Believed by many to be "dead" just a year ago, the historic final ratification came in November 2004 after Russia's President, Vladimir Putin, put his signature on the Russian Duma's endorsement.

"The fight against climate change has been under starters orders for far too long. But it is finally out of the blocks and running as a result of this very welcome decision to ratify by the Russian Parliament," said UNEP's Executive Director Klaus Toepfer. The goal of stabilizing the climate and securing the stability of the planet, however, is still "a long way off", says Toepfer, adding that efforts must be increased to deliver the even deeper cuts in emissions needed.

URC AND UNEP ADDRESS CLIMATE CHANGE AND DEVELOPMENT ISSUES IN SEVERAL PROJECTS

"This long term effort must also consider the role developing countries could play, especially those rapidly developing countries whose emissions are growing," he says. The UNEP ED emphasized that the involvement of developing countries should only happen under the Rio Principle of Common but Differentiated Responsibilities". This Principle, agreed to at the 2002 World Summit on Sustainable Development, recognises historical differences in the contributions of developed and developing states to global environmental problems, and differences in their respective economic and technical capacity to tackle these problems.

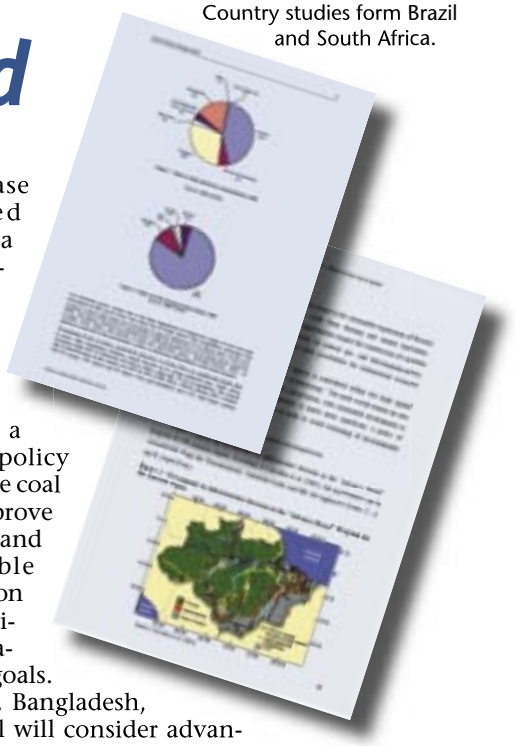
The Protocol's enforcement was also welcome news at URC and UNEP where a number of programmes and projects are aimed at climate change issues – particularly in developing countries. "Now we get to apply in reality what we have been practicing in principle," says Mark Radka, head of UNEP's newly expanded Energy Branch.

URC's Director, John Christensen, says the Protocol is "an immediate and compelling opportunity" to boost sustainable development efforts. "In many developing countries today, the issue of climate change is overshadowed by a number of immediate development priorities, including poverty eradication, food and water security, health, and energy access," he says.

To address climate change and development issues, URC and UNEP are working on several fronts. The Development and Climate Project helps to find policy links between development and climate change while another project helps developing countries benefit from the Protocol's Clean Development Mechanism (CDM). Other programmes are aimed at promoting sustainable energy through finance initiatives such as SEFI and a new seed capital fund. These programmes are also supported by other efforts such as the Global Network for Energy and Sustainable Development (GNESD). With climate change now firmly on the political and economic agendas, there is little doubt that more focus will be placed on the work of UNEP and URC.

Development and Climate Project

Moves Forward



Country studies form Brazil and South Africa.

The Climate and Development Project is aimed at facilitating developing countries find initiatives and policies that produce both development and positive climate outcomes, even though climate change may not be an immediate priority. The Project is now moving into the second phase after successfully completing a number of country studies that identified a several major links between development policies and climate change impacts, including both mitigation and adaptation policies.

The Indian national study shows climate change and development policies interact in a number of interesting ways. For example, a study of the Konkan railway from Mubai to India's southern tip along the west coast, found that although the project was built to modern standards and perceived to be "climate proof", two accidents in three years killed more than 100 people. "Both accidents were due to landslides from more rain at those places than engineers had anticipated," says URC's Amit Garg.

The study encourages the design of infrastructure projects to be based on possible future climate change and not on data from the climatic past. "We have devised a new methodology called 'reverse impact matrix', says Garg, explaining that legislation requires large Indian projects to assess their impact on the environment. "But we have turned this around and now suggest that new designs are based on what impact climate change will have on the project in the long-term," he says.

Another case study, however, shows that policies to reduce local air pollution do not necessarily lead to correspondingly high reductions in CO2. In New Delhi, a recent major policy decision for reducing local air pollution was to invest in compressed natural gas - CNG - for the city's public transport network and taxi fleet. This has reduced emissions of sulphur dioxide and particulates.

"We found, however, that CO2 and local pollutant emissions from India, although connected, do not move in synchronization in future and have a disjoint. CO2 emissions continue to rise due to growing energy and transport needs, while local pollutant emissions decrease after some years," says Garg. Consequently, although development and climate change are linked, CO2 emission mitigation would have to be pursued for its own sake in India.

In another case study, one of the largest and most economically attractive options in the South Asian region analyse an energy market collaboration between Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The collaboration can include natural gas pipelines, hydropower, and power transmission lines to support developing energy markets. The estimated that increased energy savings could yield 60 EJ during 2010-2030 while reducing total energy costs by $180 billion and cumulative carbon emissions by 1.4 billion tonnes. Country studies can be found at http://developmentfirst.org/countrystudies.htm.

In Phase II country studies will investigate how sustainable development and climate change can be integrated with adaptation and mitigation policies, including a special emphasis on the energy sector. The approach is to look at the challenges first from a development perspective and not, as is the case with developed countries, from a climate perspective.

In phase II, China, India, and South Africa plan to assess a range of energy policy options that reduce coal consumption, improve energy efficiency, and expand renewable energy consumption against their contribution to sustainable development goals. At the same time, Bangladesh, Brazil and Senegal will consider advanced biomass options, energy access for the poor, and energy efficiency improvements.

"The country studies will be based on a common methodology developed with our partners, and we hope to integrate sustainable development and climate change policies with international collaborations in the areas of finance, technology transfer, private sector partnerships, and international agreements," says URC's Development and Climate Project Manager, Kirsten Halsnaes.

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Upcoming Events

E7 Rural Electrification Workshop, Bangkok, Thailand, February 23 - 25, 2005

The workshop is focused on developing a cost-effective and streamlined process for e7 partners and associated organizations to implement rural electrification projects in South East Asian countries. The workshop will concentrate on the "how to" issues of developing rural electrification projects, including institutional aspects such as best-practice public-private partnerships.

The workshop is relevant to rural electrification practitioners, energy and development policymakers, regulators and other interested parties who wish to develop rural electrification programs and projects in developing areas.

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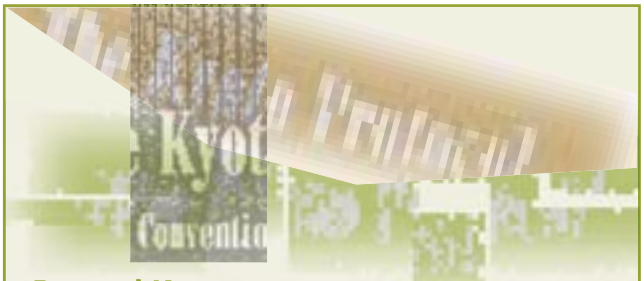

Beyond Kyoto: What's Next?

The consensus among climate scientists is that the Kyoto Protocol - the world's first global effort to reduce atmospheric carbon emissions - is a necessary and urgent first step, but a much more comprehensive long-term effort is needed to achieve the necessary emission reductions.

As part of a project called 'Climate Policy Frameworks Beyond 2012', policy makers and researchers from China, India, South Africa, Russia, USA, Nordic countries and other parts countries met in Copenhagen in October 2004 to explore promising new ways to formulate and implement global climate policy and actions that can greatly reduce greenhouse gas emissions now and after the first commitment period ends in 2012.

The meeting was organised by URC and Norway's climate research centre CICERO, and one of the meeting's main conclusions is that future climate policies must draw on the best elements of the Kyoto Protocol without excluding other promising avenues that may assure the broadest participation and emission reductions. Such avenues may include, for example, industry commitments and bilateral agreements. Large key emitters could also form the core of negotiations, working for an agreement that others can later join.

URC´s Anne Olhoff said at the workshop that a more integrated approach to sustainable development and climate change policies can not only create incentives for developing countries to participate, but can also lead to much more cost-effective mitigation and adaptation measures. To support this goal, URC is developing a integrated framework to analyse sustainable development and climate policies that explore positive and negative links between climate change and sustainable development. Such a framework can be useful to policy makers and generate a better understanding of policies that tap the synergy between development and climate priorities, she says.

Another main conclusion was the need – and value - of getting a price on carbon and international markets for credits. Such measures can have a range of positive impacts, including increased energy efficiency and technology research and development. Olhoff says the group recognized that "even a small price on carbon creates very strong incentives" and cited the rapidly growing number of CDM projects being prepared.

More information can be found at www.climatenordic.org. The Project will also host a side event at COP 10 in December.

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Seed Capital: Making it Commercial

The experience of UNEP's Rural Energy Enterprise Development Initiatives (REED), has shown how just a small amount of initial capital – or 'seed' finance – can often make a huge difference; helping new clean energy entrepreneurs get their business ideas up and running. Seed capital allows entrepreneurs to take the sorts of risks needed to innovate new products and services – risks that conventional banks normally will not finance.

The little interest by commercial financial institutions is because the cost of preparing the enterprises for investment – the transaction cost – is usually disproportionately higher than conventional loans, and the financial returns are still low. Such investments are just considered to costly for the risks that must be taken.

To address these barriers and engage the finance sector in the seed capital business, UNEP is developing a new finance facility with E+Co, a US-based non-profit investor, under the Global Environment Facility. The Seed Capital Access Facility (SCAF) is being designed to close the cost and risk gaps between what clean energy SMEs can offer, in terms of risk adjusted returns on capital, and what energy funds are able to receive, while remaining commercially viable.

It works this way: if an energy fund agrees to allocate a portion of its capital to seed scale investments, the SCAF could share a portion of the elevated transaction costs of the smaller deals, and also 'buy-up' the returns of the portfolio to some minimum level. In essence, this facility provides a form of credit enhancement, which today are proving to be effective at shifting renewable energy markets from cash-based to credit-based delivery models. However, they have not to date been applied to the area of earlier stage, risk capital.

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First Solar Installation Follows MEDREP Launch

More than 150 representatives from industry and government attended the official launch of the Mediterranean Renewable Energy Programme on September 27th in Tunis, Tunisia. With funding from the Italian government and support from UNEP, MEDREP aims to help 30,000 Tunisian households acquire solar water heating systems with the help of an interest rate subsidy.

With an abundant solar energy resource, Tunisian families can reduce their electricity bills by using a solar water heater, which has a simple payback of about six years. An affordable solar water heater will also allow many families that now rely on bottled gas for limited hot water to havea continuous supply.

The Tunisian government has pledged an additional 1 million dinars (about $800,000) to provide a capital subsidy that will reduce the initial price of a typical 2 square metre solar water heater by about 20 percent. The first systems are due for installation in mid-December 2004.

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New Staff

Amit Garg recently joined URC from New Delhi to work on sustainable development and climate issues. Amit was formerly involved with the preparation of India's initial national communication to the United Nations Framework Convention on Climate Change (UNFCCC) through the Indian government's Ministry of Environment and forests. Amit has special expertise in energy modelling, greenhouse gas emission inventory and projections, and sustainable development issues.

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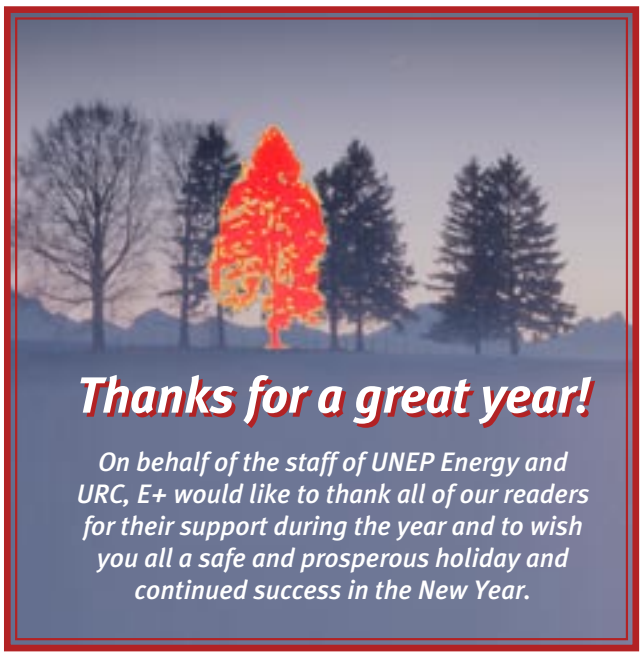

UNEP Energy Branches Out

As the result of substantial expansion over the past five years, UNEP's Energy Programme has now been established as its own branch within UNEP's Division of Technology, Industry and Economics. The overall aim of the new UNEP Energy Branch remains unchanged - bringing about a global shift to energy systems that are less disruptive to the environment, do not harm human health, and that support sustainable development in its broadest sense.

Mark Radka will have overall responsibility for the Branch, which now includes 12 staff members in Paris and supported by 22 staff at the UNEP Risoe Centre and six staff at the Basel Agency for Sustainable Energy. The Energy Branch has two units: one dealing with renewables and finance issues (under Eric Usher) and the other with energy and transport policy issues (under Mark Radka). This makes it one of the largest energy programmes in the UN system both in number of staff and in the amount of resources available for non-investment areas such as training and policy support.

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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.uneprisoe.org/newsletters.htm. To receive an electronic or printed copy of E+, please register on our website www.uneprisoe.org or contact Maria Andreasen (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).

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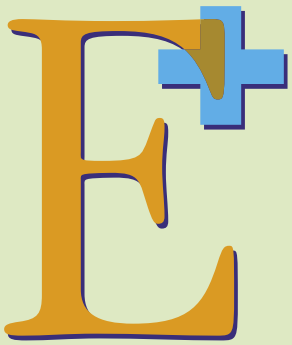
Capacity Development for the Clean Development Mechanism

- a UNEP project funded by The Netherlands



ENERGY, CLIMATE AND SUSTAINABLE DEVELOPMENT

An insert about CD4CDM in the Newsletter of URC and UNEP November 2004

With Russian ratification the Kyoto Protocol comes into force in early 2005. This will lead to increased focus on the Kyoto Mechanism especially the Clean Development Mechanism – or CDM. Developed countries can use the CDM to gain carbon credits through projects in developing countries, while developing countries can use CDM projects to advance sustainable development objectives.

Since 2002 UNEP through its Risoe Centre on Energy, Climate, and Sustainable Development (URC), has been working to help eleven developing countries (see box) prepare for the CDM in a project called 'Capacity Development for the CDM' – or just 'CD4CDM' (www.cd4cdm.org).

At the start of CD4CDM only few of the participating countries had the capability to develop, host and implement CDM projects. It was also clear that without a substantial and coordinated effort to increase the capacity to implement CDM projects, many of these countries were unlikely to develop and implement qualified CDM projects and, therefore, profit from the CDM.

The overall aim – and benefit - of CD4CDM is to generate the broad understanding necessary for developing countries to participate as *equal partners* with developed countries in the CDM. This is critical if the CDM is to help meet the national sustainable development goals of developing countries and to ensure the CDM is successful and efficient.

Designated National Authorities

The CDM requires a designated national authority – usually hosted by a government department - to approve CDM projects. One of the CD4CDM's major activities is to help establish DNA's, designed to be funded from the future sale of Certified Emission Reductions (CERs) in order to make the DNA itself sustainable. For many smaller countries this means a light structure integrated in an existing institution.

As with many other initiatives with a political dimension, a dedicated local "champion" can move the process more quickly, and of course, political and financial stability greatly enhances the chance of national CDM projects. The "champion" effect can be illustrated by Morocco, which has just been given the fifth highest rating in Point Carbons CDM host country rating (above China and South Africa), which includes assessment of host countries' institutional conditions for CDM, investment climate, as well as project status and potential.

Establishing a DNA can, if properly integrated in the national decision structure, be useful in itself, as it can improve communications between organisations such as energy, environment and finance ministries. This can help countries to develop innovative ways to overcome investment barriers and improve the overall business environment.

Currently, nine out of the eleven countries participating in CD4CDM have ratified the Kyoto Protocol and seven CD4CDM countries have established and/or consolidated DNA's. Six countries have also created initial portfolios of potential CDM projects. By the end of 2005, the rest of the participating countries are expected to have both DNAs and project portfolios in place.

Project development and meeting investors

A major CD4CDM activity in 2004 has been to facilitate CDM Investment Forums, designed to help buyers meet sellers of CDM carbon credits to explore possible projects.

Through targeted CDM capacity building efforts in two project countries, Egypt and Morocco, national experts have put theory into practice by designing a portfolio of CDM projects in each country. As the formulation of the portfolio was completed, consisting of several Project Design Documents (PDD's) as well as Project Idea Notes (PIN's), the CD4CDM project organised the North Africa and Middle East CDM Investment Forum in Jerba, Tunisia in September 2004. A similar event, the Asia CDM Investment Forum in Manila, Philippines, was organised in October 2004 involving the Philippines, Cambodia and Vietnam.

The forums attracted a wide range of buyers, which could be categorised into four groups:

CD4CDM Countries

- **Bolivia**
- **Cambodia**
- **Cote d'Ivoire**
- **Ecuador**
- **Egypt**
- **Guatemala**
- **Morocco**
- **Mozambique**
- **Philippines**
- **Uganda**
- **Viet Nam**

One of the CDM projects presented to investors at the Jerba Forum is an 85 MW wind farm on the Egyptian coast of the Red Sea. Proposed by the New and Renewable Energy Agency of Egypt and the Spanish Development Fund. The project will use Spanish built turbines to generate clean electricity as well as 155,000 CERs (equivalent to 155,000 tonnes of CO2 per year).

- **CDM Investors:** Entities interested in putting equity investment in power generation projects using clean energy technologies while also benefiting from the sale of Certified Emission Reductions generated.

- **National Carbon Funds:** Funds established by Annex I governments to assist industries purchase CERs to contribute to compliance with schemes such as the EU Emissions Trading Scheme. Examples are the KfW Carbon Fund, Japan Carbon Fund, Italian Carbon Fund, and UK CDM office.

- **Carbon Brokers:** Representing various clients, these brokers purchase CERs for their clients who want to comply with EU ETS.

- **VER Brokers:** Firms interested in buying Verified Emission Reductions (VERs) which are then sold to companies and organisations wanting to implement carbon offsetting schemes in order to become carbon neutral.

A number of useful lessons were learned from the Jerba and Manila events, which will assist in further progressing the implementation of the CD4CDM project. First, there is a shortage of well-designed CDM projects in the global CDM market, and the Buyer community is competitively looking for CDM projects that have been thoroughly conceptualised and prepared. Second, buyers are only willing to seriously consider CDM projects in a country if it has established a DNA and ratified the Kyoto Protocol. Third, the preparedness among host countries participating in the forum varied greatly between host countries receiving capacity building for CDM vs. those who are not. Egypt and Morocco are leading the way in their region in terms of readiness for CDM projects, primarily due to the capacity building they received.

CDM Project Pipelines

North Africa

Egypt:
- Two grid-connected wind projects.
- Five energy efficiency projects.
- Two landfill gas capture and flaring projects.

Morocco:
- Seven renewable energy projects.
- Two energy efficiency projects.
- Two landfill projects.

Asia

Cambodia:
- One biocogen and one methane recovery project.

Phillipines:
- One bioenergy, , one waste-to-energy, and one forestry project .
- Two wind projects.

Vietnam:
- One biomass and one forestry projects.
- One wind-diesel hybrid project.

Malaysia:
- One methane from biomass project.

The same is happening in the Asia region where Vietnam, Philippines, and Cambodia were better prepared for the Forum than the non-project countries. Finally, the complexity of CDM's modalities and procedures makes building capacities of host countries a key ingredient for success of the CDM concept.

The market is still evolving, particularly with the EU Emission Trading Scheme starting next year. The majority of buyers in past Forums have governments from the EU and Japan and private sector companies from EU looking for projects that could help them comply with the EU scheme.

It is evident from the two Forums that there is a pressing need for more emission reduction purchase programmes to allocate funds for institutional support, as this will indirectly contribute to reduction of their transaction cost.

Publications

CD4CDM has in 2004 developed a range of publications to facilitate participation in the CDM. All publications can be found and downloaded from http://cd4cdm.org/publications.htm .

The CDM Information and Guidebook

A comprehensive overview of the CDM is presented in this publication, including the CDM project cycle and related issues such as links to sustainable development goals, financing and markets. The appendices present frequently asked questions and answers; a short overview of existing guidelines, and a list of project categories that may be eligible for the CDM in the future.

Legal Issues Guidebook to the CDM

The publication is aimed at helping developing countries improve their awareness and understanding of the legal and contractual issues needed to smoothly advance CDM projects from project preparation to implementation. The guidebook presents various types of CDM project-related risks; the project implementation stage at which each risk is associated; and the possible means for mitigation or management of these risks. Readers may also find particularly useful the section covering different types of project contracts and legal clauses used to cover different project elements.

CDM Sustainable Development Impacts

This guideline provides a general introduction to policy-makers and experts on how CDM projects can be developed and designed to assist sustainable development as required in Article 12 of the Kyoto Protocol. The publication provides a broad overview of how sustainable development can be understood as a practical policy framework in relation to CDM projects.

Institutional Strategy to Promote the CDM in Peru

This booklet shows how Peru has designed an institutional strategy to promote the CDM under a "national project cycle" inspired by and complying with the international rules for the CDM.

Baseline Methodologies for CDM Projects

Building capacities in the baseline methodology and assessment of GHG emission reductions/sequestration benefits of CDM projects are keys to the successful development and implementation of CDM. The guidebook takes the reader through basic concepts, the processes of developing baseline and baseline methodology, and approval of new baseline methodologies. It presents indicative methodologies for small-scale CDM projects and examples of approved methodologies for project specific baselines. Furthermore, it describes the process of developing baselines for land use and land use change (LULUCF) CDM projects.

Bundling Small-Scale CDM projects

The report highlights the problems associated with bundling of small-scale CDM projects and suggests possible approaches to bundling. The Guideline will be avaliable early 2005.

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