



ENERGY, CLIMATE  
AND SUSTAINABLE  
DEVELOPMENT

A Newsletter of  
URC and UNEP  
September 2004

**Tunisia Solar Loan Facility  
will commercialize and  
deploy clean energy  
technology to the benefit  
of the households and the  
society as a whole.**

## UNEP Gets Into Hot Water

After successfully introducing an Indian solar finance initiative (see following article), UNEP is now getting into hot water – or more precisely *solar hot water*. In partnership with the Tunisian Agence Nationale pour la Maîtrise de l’Energie and the Tunisian state utility, Société Tunisienne de l’Electricité et de Gaz (STEG), UNEP will launch a solar loan facility called “SOLDinars” (from the French ‘solaire’ for ‘solar’ and the Tunisian currency ‘dinars’) as part of the Mediterranean Renewable Energy Programme (MEDREP).

With funding from the Italian government, SOLDinars is designed to change both the perceptions and economics of solar water heating in Tunisia. SOLDinars will be launched at the formal opening of the Mediterranean Renewable Energy Centre in Tunis, on September 27<sup>th</sup>.

UNEP’s project coordinator, Myriem Touhami, explains that in the hot and sunny areas of the southern Mediterranean, a solar hot water system is not an uncommon appliance for those with substantial incomes. However, for middle class families a solar water heater can cost four times their monthly income. It is anticipated that 20,000 to 30,000 households will be equipped with solar water heating systems within the next 3-4 years.

“Even though a solar hot water system can payback the investment in as little as six years, the capital cost presents an unscaleable financial barrier for many families”, she says.



Past efforts to promote solar water heaters in Tunisia have been less than successful and due mainly to immature technology and poor quality, locally manufactured systems. The result was a decrease in the market from approximately 5000 square metres per annum at the end of the 1980s, to a few hundred square metres in the mid-90s. This past experience has naturally made the government shy of further promotions.

Touhami says the new programme is an ‘interest rate subsidy’ facility that will effectively lower the interest rate for a SOLDinar loan. The state utility, STEG will help promote the facility and the use of solar water heating systems by recovering the monthly “SOLDinar” loan payment via a STEG customer’s utility bill. This reduces the risk of a consumer defaulting on the loan, which lowers the bank’s risk and contributes to the creation of a sustainable market for solar water heating systems.

SOLDinar loans will be offered on terms of 3-60 months and an interest rate of approximately four percent, which is lower than the rate for mortgage finance. Current consumer loans carry an interest rate that is three

*To be continued on the back*

## Risoe Creates Energy For Development Network



URC's home institution, the Danish Risoe National Laboratory, has embarked on a new "cross-cutting" initiative to promote energy for sustainable development in developing countries. Risoe's *Energy for Development* (EFD) is the focal point for Risø's activities related to energy in developing countries, implemented jointly by the departments of Systems Analysis, Wind Energy and Plant Research. "These departments already have well-established research programmes and competencies, including various aspects of energy," says URC's Gordon Mackenzie. EFD brings these strengths together with a focus on energy issues in the developing world and offer a synergy with URC's expertise, particularly those involving renewable energy and the Clean Development Mechanism.

EFD's activities include:

- Developing tools and guidelines for planning and implementing the introduction of renewable energy technologies into energy systems;
- Creating guidelines for Clean Development Mechanism (CDM) projects involving wind energy;
- Developing education and training programmes for the integration of renewable energy in developing countries; and
- Supporting the EU Energy Initiative (EUEI) through a programme funded by Danida aimed at improving energy access in Africa.

As one of its first activities, the EFD co-organised the "ASEAN Energy Business Forum" in Manila during June. URC's Romeo Pacudan, who helped organise a wind workshop during the event, says that the Asian market is important with 76 GW of renewable energy potential in the Philippines alone. "Renewable energy is also important because several coal-fired projects are being contested by NGOs and there is a strong dependence on imported fuels," he says.

EFD is now planning two workshops in West and Southern/Eastern Africa as part of the EU Energy Initiative for Poverty Eradication and Sustainable Development (EUEI). See 'Upcoming Events' below. "The events, financed by the Danish Government and the European Commission, can be viewed as an initial step towards implementation of the Nairobi recommendations and activities since the Johannesburg WSSD and relating to fulfilling the Millennium Goals," says Mackenzie.

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## Legal Issues Explored in New CDM Guidebook

One of the most important aspects of the Kyoto Protocol for developing countries is the Clean Development Mechanism - or CDM. The CDM will allow developed countries to partially offset carbon emissions by participating in special 'carbon abatement projects' in developing countries that can benefit from the sustainable development benefits such clean investment can bring. Although this is great in theory, the practice is more difficult.

"As with the path to sustainable development, the road to productive CDM projects is not without its hazards," says UNEP Risoe Centre's Sami Kamel, who has been working on a number of guidelines to help all countries gain maximum economic, social and environmental benefits from the prospective CDM.

One of these guidelines, *The Clean Development Mechanism of the Kyoto Protocol: Legal Issues Guidebook*, is aimed at helping developing countries develop a better awareness and understanding of the legal and contractual issues needed to smoothly advance CDM projects from project preparation to implementation. Doing so maximizes benefits for both parties, says Kamel.

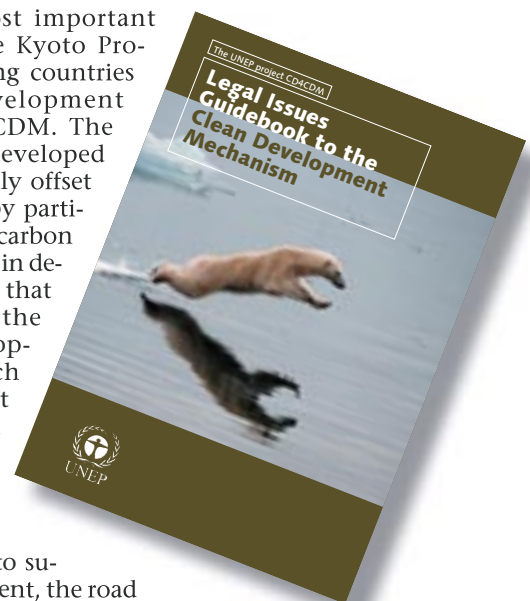
The guidebook presents various types of CDM project-related risks, the project implementation stage at which each risk is associated, and the possible means for mitigation or management of these risks. Readers may also find particularly useful the section covering different types of project contracts and clauses used to cover different project elements.

Although the guidebook was authored by the Baker & McKenzie law firm, Kamel cautions that it is intended only to act "as an eye opener" and not as a tool for legal advice, which requires project-specific and professional legal expertise that reflects specific national conditions.

This Guidebook was produced by the UNEP Risoe Centre (URC) under the Capacity Building for CDM Project [[www.cd4cdm.org](http://www.cd4cdm.org)] funded from the Netherlands Ministry of Foreign Affairs. *The Clean Development Mechanism of the Kyoto Protocol: Legal Issues Guidebook* can be downloaded from "<http://www.cd4cdm.org/publications.htm>" [www.cd4cdm.org/publications.htm](http://www.cd4cdm.org/publications.htm) along with related publications: *Clean Development Mechanism, CDM Information and Guidebook (2nd edition)*, *CDM Sustainable Development Impacts*, and *Institutional Strategy to Promote the Clean Development Mechanism in Peru*.

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**Per Kolbeck of the GNEED was kept running as he distributed materials from the UNEP display at the Bonn Conference.**

**Renewable energy:**

# Where to from Bonn?

The Bonn Conference on Renewable Energies in June became one of the largest intergovernmental gatherings of its type, attracting more than 3000 participants from 154 countries. After four days of discussion, presentations and side events, the Conference concluded with a Political Declaration, an International Action Plan and a set of renewable energy policies (all can be found at "<http://www.renewables2004.de/en/2004/outcome.asp>" <http://www.renewables2004.de/en/2004/outcome.asp>).

Affirming both the goals of the 1992 Rio Summit and the UN Millennium Goals, Ministers and Government Representatives emphasised the need for coherent regulatory and policy frameworks that support the development of thriving markets for renewable energy technologies and recognize the important role of the private sector. At the same time, the statement recognized "the diversity of circumstances among regions and countries as well as their common but differentiated responsibilities and respective capabilities".

One of the more relevant parts of the declaration for UNEP was the decision by governments to create a "global policy network" that includes representatives from parliaments, local and regional authorities, academia, the private sector, international institutions, international industry associations, consumers, civil society, women's groups, and relevant partnerships worldwide. This informal network should take into account the work already being undertaken by existing partnerships and should promote a comprehensive and open exchange of diverse perspectives, lessons, and experiences in the development and application of renewable energies. Work on structuring the Global Policy Network started over the summer, and the intention is to have a formal launch of the GPN in early 2005.

**... renewable energy can be a major tool to build economic and social development while protecting the environmental values on which that development depends.**

*UNEP Executive Director, Klaus Toepfer*

UNEP and URC were both well represented at Renewables2004, including the hosting a number of side events, press conferences and an exhibition stand. UNEP also used the occasion of the Conference to conduct a two-day event, *Financing Sustainable Energy: Creating the Climate for Change* as part of the new Sustainable Energy Finance Initiative (SEFI).

In his keynote address, UNEP Executive Director, Klaus Toepfer said renewable energy can be a major tool to build economic and social development while protecting the environmental values on which that development depends. "But," he added, "it is only part of what we need."

"Energy systems based on renewable energy and continuously improving energy efficiency - a combination commonly called 'sustainable energy' - are the 'multi-purpose' tool that can best help all countries develop sustainably. Put another way: Development needs energy, Sustainable Development needs sustainable energy."

Toepfer highlighted the potential of the Global Network on Energy for Sustainable Development (GNEED) to become the global knowledge and advisory body on sustainable energy, similar to the role the CGIAR has had for agricultural development and food security. The GNEED, he said, can complement initiatives such as the Global Village Energy Partnership and the Renewable Energy and Energy Efficiency Partnership (REEEP).

URC's John Christensen said the Bonn Conference was successful just from the sheer level of participation, particularly from the energy sector. "Representatives from more than 130 countries and a high level of participation from a large number of developing countries engaged in a very constructive way", he

said. Christensen hopes that one of the major outcomes of the Conference will be a "strong impact" on the discussions next year regarding the Commission for Sustainable Development.

"When you look at the action programme with more than 200 individual commitments, there is a lot of potential for positive action," he says. However, Christensen also cautioned that at the moment, there is no follow-up mechanism. "The Action Programme needs a review and monitoring process if it is to be successful".

For its part, the Global Network on Energy for Sustainable Development (GNESD) is committed to continuing and expanding its activities, including work on energy poverty and access, and the current theme of renewable energy that will finish its first phase this year and continue based on new funding.

"Renewables2004 was a tiring but rewarding event," noted UNEP Energy Programme Co-ordinator Mark Radka. "We see it as confirming the direction of much of UNEP's energy work during the past few years, particularly our efforts with financial institutions on funding renewable energy projects and our emphasis on energy enterprise development. But the Conference has also highlighted the need to do more on overall policies that support sustainable energy and so we'll be putting more emphasis on this aspect in the coming year."

### **Financiers Consider the Climate for Change**

On 1-2 June 2004, the event *Sustainable Energy Finance: Creating the Climate for Change*, brought together more than 250 members of the finance community, government officials and project developers from 37 countries as part of



**"Delegates to the Bonn Conference could relax and chat about the days events at the Solar Cafe powered by an array of semi-transparent PV panels."**

financial tools needed to finance sustainable energy," she says.

This event was the first meeting under UNEP's Sustainable Energy Finance Initiative (SEFI), which builds on UNEP's long standing partnership with the banking and insurance community. SEFI aims to foster a sustainable energy finance community that brings together financiers, engages them to do jointly what they may have been reluctant or unable to do individually, and enables public-private alliances that together share costs and lower barriers to investment.

"In Bonn we took some small steps in that direction, and invite the finance community to engage with us in the future to create the climate for change," says Sontag-Obrien.

the International Conference for Renewable Energies2004.

Organised by UNEP and the Basel Agency for Sustainable Energy (BASE), the two-day event included a wide range of sessions on topics such as risk management, venture capital, consumer lending and micro-finance, export credit, carbon credits and SME finance, as well as public-private partnerships.

The various technical sessions carried out during the two-day event produced a range of recommendations for breaking down barriers to sustainable energy investment. These are summarised in the meeting communiqué, which is available on-line at "[http://www/www.sefi.unep.org/sef\\_bonn](http://www/www.sefi.unep.org/sef_bonn)" along with the various session presentations.

The event helped to clarify and deliver a finance sector perspective to the Bonn Conference. The perspective, explains BASE director Virginia Sontag-O'Brien, was both upbeat and cautious. "Expectations are rising but significant gaps still exist in the underlying frameworks and



**Delegates from more than 150 countries to the Bonn Conference on Renewable Energies met in the hall that was formerly occupied by the German parliament.**

# Indian Solar Loan Programme

## Stays “Charged”



After its first year of operation, UNEP's Indian Solar Loan Programme continues to be popular and on target to deliver clean electricity to 20,000-25,000 Indian families by 2006. The Programme offers a credit facility with two of India's largest banks, Canara Bank and Syndicate Bank (and their Grameen Banks), to help rural households finance the purchase of photovoltaic-based Solar Home Systems (“SHS”). In the first year, the Programme has disbursed almost 5,000 SHS loans and expanded to 1800 participating bank branches.

**The Indian solar Loan Programme will bring modern and reliable electricity to rural and peri-urban households and enterprises in an environmentally and sustainable way.**

“The Programme has exceeded our initial benchmark and is now one of the largest SHS loan programmes,” says UNEP's Eric Usher. This success, he adds, demonstrates the need for new finance products to develop renewable energy markets.

The basis of the UNEP Programme is an ‘interest rate subsidy’ that essentially lowers the commercial lending rate from 12% to 5%. The subsidy will be progressively removed and eventually bring the cost of SHS financing up to fully commercial terms as the market matures.

In addition to providing financial support in the form of interest rate subsidies for borrowers, the UNEP Indian Solar Loan Programme also provides assistance with technical issues, qualification of vendors and other activities to develop the institutional capacity for this type of finance. The Programme is supported by the Shell Foundation and the United Nations Foundation.

Such finance products are critical in a country that is 85% electrified but where more than 80,000 villages and 70% of rural houses remain unconnected to the power grid. India also has substantial renewable energy markets, generating 3000 MW from renewable energy in 2001, or 3% of total grid capacity, and an estimated potential of 100,000 MW. India also has one of the largest solar energy development programmes in the world.

Usher says the solar loans are making a difference, accounting for more than 50% of SHS buyers in an increasingly competitive SHS commercial market. Consequently, more banks are now considering solar loans and new applications in Kanataka as well as neighbouring States.

The Indian Government also appears to have decided to

gradually reduce an emphasis on capital subsidies in their Solar Loan Programme. Initially a means to create market awareness, the capital subsidy approach can hinder the development of a commercial market because the large subsidy means only a few systems could be financed. The Government is planning to launch an interest rate subsidy programme for Solar Home Systems.

“The approach in the design of the UNEP Programme has always been to help the banks do what they do best while encouraging the market based on solid market principles,” says Usher. Following the success of the Indian programme, UNEP is also launching a similar programme for the Moroccan solar water heating market (see lead article).

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### Upcoming Events

#### **EUEI Facilitation Workshops and Policy Dialogues: Energy Access for the Rural Poor**

Oagadougou, Burkina Faso 26-29 October 2004 and Maputo, Mozambique mid-February 2005 (date to be confirmed)

These workshops follow directly from the EUEI Conference “Energy for Africa” held in Nairobi in November 2003 to improve access to energy services for rural areas of Africa, particularly improved rural electrification, sustainable use of biomass and household energy, as well as the corresponding development of policies and strategies. For more information, go to: “<http://www.e4d.net/euei>” [www.e4d.net/euei](http://www.e4d.net/euei) or contact Gordon Mackenzie, Tel: +45 4677 5171, [gordon.Mackenzie@risoe.dk](mailto:gordon.Mackenzie@risoe.dk)

#### **Dutch Conference**

#### **Facilitating Adaptation to Climate Change in the South Pacific Region**

—Bridging Research, Policy, and Implementation, 11-13 October 2004, Apia, Samoa.

The workshop is co-sponsored by URC and the Japanese Institute for Global Environmental Strategies with funding from the New Zealand and Australian Governments. Contact Myung-Kyoon Lee, URC, +45 4677 5168, [mk.lee@risoe.dk](mailto:mk.lee@risoe.dk)

## New Publications



### Fuel Pricing Policies for Latin America and Mexico,

By Hugo Altomonte, UN Economic Commission and Jorge Rogat, UNEP Risoe Centre and for Latin America and the Caribbean (ECLAC)

This report, published in Spanish and English, is a follow-up to the UNEP/IEA energy subsidy workshop series and is based on various workshops on environment and economic implications of current fuel pricing policies in South America and Mexico as well as the result of an extensive data survey of the 11 countries. The in-depth report discusses fuel pricing policies in these countries and economic and environmental implications. (See [www.uneprisoe.org/publications.htm](http://www.uneprisoe.org/publications.htm))



### Making it Happen: Renewable Energy and the Role of Export Credit Agencies

Prepared by UNEP under the Sustainable Energy Finance Initiative, this Executive Briefing explores the many opportunities of Export Credit Agencies (ECA's) to promote greater use of renewable energy. (See [www.uneptie.org/energy/publications](http://www.uneptie.org/energy/publications))



### CEO Brief: Renewable Energy

The third report by the Climate Change Working Group of the UNEP's Finance Initiative (UNEP FI) presents the business case for renewable energy, calling for more leadership from policy makers and action by financial institutions to capture US\$ 2 trillion of potential investment in renewable energy in the next two decades. (Download from <http://unepfi.net/>).



### Financial Risk Management for Renewable Energy Projects

This publication presents an overview of specific risks, currently available risk management products, and emerging instruments that could be modified and applied to sustainable energy projects, particularly those that involve renewable energy. The publication further explores possible new products based on partnerships between private and public sector risk managers. (See [www.uneptie.org/publications](http://www.uneptie.org/publications).)

## New Staff

### Nicoline Kornum Research Assistant



Nicoline comes to URC from the Danish Ministry of Foreign Affairs where she was in the department for Southeast Asia. Nicoline also spent two years in the Gambian country office of the UNDP. With a Master of Science in Economics degree, she will be helping to bring her extensive development perspective to URC's energy projects.

*Continued from the frontpage*

times higher. The monthly loan repayments will also be structured to match current monthly spending on other forms of energy.

The Tunisian government has promised to offer the same subsidy to owners of new solar water heaters as the subsidy currently offered to users of conventional energy. The MEDREP interest rate subsidy will be available until the Tunisian Government offers its own solar water subsidy, which can then reduce the need for conventional energy subsidies.

Although the loan programme is only available for domestic systems in Tunisia, another programme, mainly for tourist hotels, is under development for commercial solar heating systems in Morocco. "We will hopefully launch a programme in November and are working with the Moroccan state electric utility, Office Nationale de l'Electricité (ONE)," says Touhami.

The Moroccan programme will be piloted with 200 hotels that will purchase or lease a solar hot water system. As with SOLdinars, loan or lease payments will be made via the electricity bill, which makes it a low risk investment as customers risk losing their electricity supply if they default on loan repayments. This lower risk allows the banks, once again, to reduce the interest rate. "With the UNEP and Italian intervention, customers will be offered loans with an effective interest rate close to zero," Touhami says.

The loan facility is intended to help local banks build loan and leasing portfolio and will be phased out progressively over 3-4 years to allow the smooth transition to an unsubsidised market.

This project will also create other benefits, including several hundred jobs by 2010 and long-term reductions in greenhouse gas emissions. "We anticipate that the collective installations of solar water heating systems in this programme can displace 357,000 metric tons of carbon dioxide over the life of the systems," says Touhami.

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**E<sup>+</sup>** 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](http://www.uneprisoe.org/newsletters.htm). To receive an electronic or printed copy of E<sup>+</sup>, please register on our website [www.uneprisoe.org](http://www.uneprisoe.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)).

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