May

UCCEE news

News from the UNEP Collaborating Centre on Energy and Environment

2000

Sustainable Energy in the Caribbean

UCCEE has begun a new collaborative project with the Latin American Energy Organisation (OLADE). The project aims at assisting decision-makers in Caribbean countries to formulate and evaluate their policies for achieving sustainable development targets. The project is part of the Caribbean Energy Action Programme (CEAP), a long-term energy strategy promoted by OLADE together with the Association of Caribbean States (ACS), the Caribbean Community (CARICOM) and the Caribbean Energy Information System (CEIS). Two country case studies, Jamaica and the Dominican Republic, will be undertaken as part of the project.

Methodological guidelines developed within the joint study on Energy and Sustainable Development in Latin America and the Caribbean will provide valuable input to the wider activities of OLADE, the German Agency for Technical Co-operation (GTZ), and the Economic Commission for Latin America and the Caribbean (ECLAC). For more information contact Arturo Villavicencio at UCCEE (arturo.villavicencio@risoe.dk).

Global Overlays

– a methodological framework for the inclusion of environmental costs in transport sector projects

UCCEE has developed guidelines for integrating global environmental impacts into World Bank transportation activities. Current global environmental externalities include greenhouse gas emissions and related climate change damages that are directly or indirectly related to transportation activities. The "Global Overlays" programme aims to integrate mitigation projects into the more general World Bank transportation sector programmes.

The *Global Overlays Guidelines* document includes a number of conceptual issues relating to GHG externalities, including baseline definitions and policy costs. The analytical framework is illustrated in relation to a number of stylised cases: urban air pollution control in New Delhi; a highway project in China; a road pavement project in Chile; LPG buses in Mauritius and a vehicle maintenance programme in Pakistan. The methodological guidelines are described in a two-volume report. The World Bank's Environmental Department will publish the *Global Overlays Guidelines* later this year. In addition to UCCEE staff, Professor Anil Markandya (University of Bath) and Dr. Jayant Sathaye (Lawrence Berkeley National Laboratory), have contributed to the project. For more information you may contact Kirsten Halsnæs (kirsten.halsnæs@risoe.dk) or Noreen Beg (nbeg@ worldbank.org).

Sustainable Energy Advising Services Facility (SEAF) launched by UNEP-Danida

The General Assembly of the United Nations has agreed that Atmosphere and Energy will be the focus of the 9th meeting of the Commission on Sustainable Development (CSD 9), to be held in 2001. The formal preparations on the energy theme started with the meeting of an ad-hoc expert group in New York from the 6th to the 11th of March this year. This meeting set the agenda for CSD 9, and launched a number of initiatives, which will be undertaken in support of the CSD 9 process.

One of these initiatives is a joint UNEP/UCCEE activity called the Sustainable Energy Advisory Facility, or SEAF. The initial pilot programme is sponsored by the Danish Ministry of Foreign Affairs and will be limited to 10 developing countries in Africa, Asia and Latin America. The aim of SEAF is to provide information and technical support for sustainable energy activities in a targeted and flexible way.

SEAF can provide support to strengthen the capacity of institutions to analyse and implement sustainable energy approaches. SEAF may also provide technical and financial support for national or regional workshops or related training.

Technical assistance will be available for activities such as:

- Sector and national planning studies;
- Climate change mitigation studies, such as Global Environmental Facility (GEF) and Clean Development Mechanism (CDM) project development;
- Technology assessment and selection;
- Individual project assessment;
- Establishing links to financing institutions such as the World Bank, GEF, regional and national development banks, and other sources of project finance.

Funding for each activity will be limited, as the underlying rationale for the SEAF is that rapid targeted assistance often is more valuable than larger amounts with more complicated procedures and time lags. Contact Arturo Villavicencio (arturo.villavicencio@risoe.dk).

African Energy Entrepreneurs:
Another small step
towards Sustainable Development

AREED – African Rural Energy Enterprise Development is a new three-year initiative supported by the United Nations Foundation and administered by UNEP and UCCEE. The US$2.5 million initiative began this year and aims to help five African nations develop rural energy service industries based on sustainable energy. These services are expected to involve renewable energy technologies, but they may also include other technologies that significantly improve environmental performance.

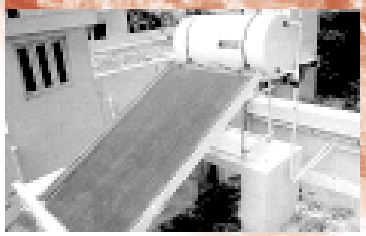
The AREED approach is to combine professional services for enterprise development with modest amounts of finance. The hope is that "seeding" new energy enterprises with the skills to run a business together with a small amount of start-up capital can lead toward modern and affordable energy services for rural Africans. This approach also broadens the depth and capacity of local organisations to nurture these "energy entrepreneurs". These new energy services - and energy entrepreneurs - are particularly important on a continent where nine out of ten people have no access to electricity and where three-quarters of the energy comes from dwindling supplies of traditional fuels.

Of course there is no magic formula to solve the immense energy challenge facing Africa, or to create energy enterprises overnight. However, certain lessons have been learned by NGOs and private sector organisations working in the field. One of these organisations is E&Co, a US-based non-profit organisation, and UNEP and UCCEE's principal partner in implementing AREED.

The project's rationale is that although technology remains to be refined, product and service infrastructure still needs development, and energy policy in many countries still requires major reform, the driving force in rural energy development is the entrepreneur and the energy enterprise he or she creates. A prepared and motivated entrepreneur can overcome many of the serious obstacles to providing modern energy services to rural areas. Further, these entrepreneurs can themselves "seed" the market for more enterprises.

With a portfolio of more than fifty energy enterprises operating in 24 developing countries, E&Co's experience demonstrates the value of combining professional "hands-on" business assistance to entrepreneurs ("enterprise development services") with small amounts of capital at an early stage in the enterprise's existence. An important element of this process is the participation of another organisation, such as an NGO or a financial institution, to provide the necessary support services. This is where UCCEE's expertise and close working relationships with a number of local organisations will be used to help provide enterprise development services to these new energy ventures.

Once the venture has attracted other partners or investors, AREED's role diminishes. From the AREED perspective, a project is successful when outside investors have been brought on board and AREED expertise is no longer needed. For additional information contact Jørgen Fenhann at joergen.fenhann@risoe.dk.



Renewable Energy in
Maharashtra, India

The UCCEE initiative on "Renewable Energy Technologies for Sustainable Development" led to a project to identify barriers to the diffusion of renewable energy technologies (RETs) in the state of Maharashtra, India. The project began in November 1998 in collaboration with the Indira Gandhi Institute of Development Research (IGIDR), Mumbai. Maharashtra is one of the leading Indian States in the area of renewable energy. Maharashtra Energy Development Agency (MEDA) was set up by the Government of Maharashtra in July 1985 and given responsibility for the development of non-conventional and renewable sources of energy.

MEDA has undertaken various programmes such as family biogas plants in rural areas and solar thermal, solar photovoltaic, biomass, and wind-based systems throughout Maharashtra. Progress, however can be accelerated as a vast potential remains untapped. Therefore, one of the objectives of the UCCEE project was to review experience and identify barriers to RETs. Two key RETs, wind energy and solar hot water systems, were identified for further analysis. The study objectives focused on the barriers to effective implementation, analysing possible measures to overcome them, and on specific RET projects for barrier removal.

The study involved various stakeholders such as manufacturers and customers of the RETs, experts, and representatives of MEDA and the State government. Questionnaires were designed to elicit stakeholder responses regarding the nature of the barriers to RETs, their dimensions and importance, and possible ways to remove them. A preliminary stakeholder survey was carried out during the middle of 1999. It was decided to conduct a more in-depth survey based on the feedback received. Responses to this survey were obtained during the last quarter of 1999 and have been analysed in a report produced by the Indira Ghandi Institute. For more information please contact Jyoti Painuly at jyoti.painuly@risoe.dk.

News from UNEP Energy

UNEP Facility for Investment in Renewable Energy and Energy Efficiency

In mid- 1999 UNEP set up a new service to help financial institutions evaluate potential investments in renewable energy technology and energy efficiency projects. The *UNEP Investment Advisory Facility on Renewable Energy Technology (RET) and Energy Efficiency (EE)* is supported by the GEF. It helps financial institutions acquire expert advice concerning specific RET or EE investments being considered in developing economies and in economies in transition.

This service builds upon UNEP's Financial Institutions Initiative, which now includes a membership of over 180 banks from 42 countries. By signing the *Statement by Financial Institutions on Environment and Sustainable Development*, bank leaders commit their organisations to incorporate environmental considerations into internal and external business activities. Where RET and EE investments are concerned, the new advisory facility will help financial institutions follow through with their commitments. UNEP believes that this combined approach will help financial institutions mainstream environmental investments more effectively.

To date the facility has provided support to five investment evaluations, which include a wind farm, a small hydro plant, a district heating system, a sustainable forestry plantation and a coffee processing waste utilisation project. The type of advisory support provided includes:

- For a salt mine investment: evaluating the feasibility of developing a plantation adjacent to the mine which would provide wood supply for salt drying in an environmentally sustainable manner;
- For a wind farm investment: investigating whether emission reduction credits can be valued, certified and sold to create the additional revenue stream required for project viability;
- For a small hydro 'peaking' plant: provision of a third party technical assessment to resolve outstanding design issues between bank and developer;
- Assisting a bank in evaluating two potential cogeneration investments as part of a planned 'carbon offsets investment fund'. The first involves a coffee waste recovery process, and the second a district heating plant upgrade.

UNEP has a mandate to play a catalytic role in bringing cleaner technologies to market. By providing information to financial decision-makers, UNEP endeavours to help direct private sector resources towards RET and EE projects in developing countries. A brochure on the RET/EE Investment Advisory Facility is available on the UCCEE website at:
http://www.uccee.org/PromoteInvestments/brochure.htm
For more information, please contact Eric Usher (eric.usher@unep.fr). For more information on UNEP's Financial Institutions initiative, please see http://www.unep.ch/etu/finserv/fin_home.htm or contact Ken Maguire (ken.maguire@unep.ch).

International climate change finance and sustainable development impacts

Since the Kyoto Protocol was endorsed in 1997, UCCEE has been involved in information and awareness raising related especially to the Clean Development Mechanism (CDM). In 1999, two regional seminars were held in Africa (see UCCEE News, October 1999). These seminars indicated the need for more detailed information and analysis on key aspects. A two-part project with the focus on international climate change finance and sustainable development impacts started at the end of 1999.

The purpose of the project is to utilise UCCEE's existing experience on mitigation to analyse CDM issues under discussion in the climate negotiation process. The CDM poses a number of specific analytical and institutional challenges for developing countries. The project aims to address these issues from a host country perspective, without being prescriptive at a time where most issues are being negotiated. The two programme components are:

- National pilot studies focusing on capacity building needs and awareness raising;
- Analytical studies and underlying methodology development to support pilot studies and provide scientific input to the Kyoto Protocol process.

For the time being, the national studies focus on Africa. One of the objectives of the programme is to generate awareness in the African region about the opportunities, problems and requirements associated with the possible use of CDM, and establish expertise and capacity for designing and managing agreements. Four countries participate in the project: the Gambia, Ghana, Uganda, and Zimbabwe.

Using criteria developed jointly by UCCEE, the Southern Centre in Zimbabwe, and the national teams, these potential opportunities will be screened to further identify 2 to 4 of the best CDM opportunities in each country. The teams will then investigate how these opportunities could be translated into CDM projects in each country, with a focus on how they could be organised, assessed, marketed and implemented under CDM.

The analytical part of the project aims to develop three aspects as follows:

- Sustainable development aspects of CDM projects;
- Testing additionality of CDM projects with the help of baseline concepts;
- Host country aspects of selecting, assessing and financing CDM projects.

The aim is to develop a methodological and practical framework for assessing sustainable development, additionality, and implementability of CDM or other climate-friendly projects. All elements are to be developed from a developing/host country perspective based on case studies. For further information contact John Christensen, Head of UCCEE, at john.christensen@risoe.dk.

Farewell to John Turkson

Dr. John Turkson worked for UCCEE for almost four years before his tragic death in an airline accident near Abidjan on 31 January. John joined UCCEE shortly after finishing his Ph.D. at the University of Pennsylvania. Before studying in the US he had been working for the National Energy Commission in Ghana and had taken an MBA in Belgium.

John had become a central staff member at the Centre where he was responsible for managing the regional programme aimed at strengthening national and regional African capacity in relation to the negotiations and possible implementation of the CDM under the Kyoto Protocol. John also led the work on the environmental and social consequences of structural reforms in the power sector of many countries. John's latest publication on Power Sector Reform in Sub-Saharan Africa has just been published by MacMillan.

In addition to his project- related work at the Centre John was involved in a number of international activities in his capacity as a highly rated international expert. He was, for example, a lead author for the Intergovernmental Panel on Climate Change (IPCC) both on the special report on Technology Transfer and in Working Group III of the ongoing Third Assessment Report. Similarly, John was a lead author on a recent study by the World Energy Council on energy sector reforms.

"He believed in making African energy economics modern and competitive - especially in the power sector through capacity building in the form of writing and networking. His humouristic, though thorough analytical approach to solving problems will be remembered by all his relatives, friends and colleagues."
Prof. Ogunlade Davidson, University of Freetown, Sierra Leone, and Co-Chair of IPCC Working Group III.

John was both a good friend and an excellent colleague. While we all miss him our thoughts are with his family and especially his wife Gifty. A memorial fund is under establishment through friends in Kumasi, Ghana. More information on this will appear in the next issue of the newsletter and on UCCEE's webpages.

New publications by John Turkson

Turkson, J.K. (ed.) (2000) *Power Sector Reform in SubSaharan Africa*. McMillan, London. ISBN: 0-333-75129-9

This book is one of the few attempts so far at examining the power sector reform process and experiences of different countries in SubSaharan Africa. The power sectors in this region are beset by many problems, including the reliability of power supply, the efficient operation of the different entities within the sector and the low accessibility of electricity to most of the population.

The book presents case studies of six countries: Côte d'Ivoire, Ghana, Kenya, Zimbabwe, Uganda and Mauritius. The studies assess the performance and efficiency of the electric utility industry in these countries, discuss the rationales behind the reforms and describe how the process has been initiated and which reform paths have been taken.

Turkson, J.K. and Amadu. M.B (1999) *Environmental protection implications of the electric power restructuring in Ghana*. Working Paper no. 8, UNEP Collaborating Centre on Energy and Environment, Denmark.

This report assesses the environmental, or, more specifically, air pollution effects of changing the fuel mix in power generation in Ghana within the context of the ongoing reform of the power sector.

The study concludes that the emerging power generation mix would increase the CO_2, SO_2 and NOx emission levels and other environmental effects in the country, and strategies for reduction in air and other environmental pollution associated with power generation must be an integral part of the design of power plants. When considered late, air quality improvement programmes may not be accorded the priority they deserve since they would be competing with other priority programmes such as housing, medical care and general economic development programmes.

Brooke, C. and Turkson, J. (eds.) (1999) *African Perspectives on the Clean Development Mechanism: papers presented at the Regional Workshop "New Partnerships for Sustainable Development: The Clean Development Mechanism under the Kyoto Protocol", Accra, Ghana, 21-24 September 1998*. UNEP Collaborating Centre on Energy and Environment, Denmark.

African Perspectives on the Clean Development Mechanism is a compilation of papers presented to the workshop *New Partnerships for Sustainable Development: The Clean Development Mechanism under the Kyoto Protocol.* The workshop, which was held in Accra, Ghana, from September 21-24, 1998, was organised by UCCEE and sponsored by the Ministry of Foreign Affairs, Denmark, UNEP and the United Nations Development Programme (UNDP).

The papers, which are all written by African experts, are an important contribution to the debate surrounding the relevance and applicability of the CDM in Africa.

Staff Changes

- **Maria Jo Figueroa** is currently on maternity leave, and will leave the Centre at the end of it.
- **Norbert Wohlgemuth** returned in February to the University of Klagenfurt, Austria.
- **Patrick Karani** returned in November to work at the World Bank.

UCCEE news provides regular information on the activities at UCCEE and UNEP Energy. The views expressed here do not necessarily represent those of UNEP, Risø National Laboratory or Danida. The newsletter and back issues are available on the internet at http://www. uccee.org/newsletters.htm. If you would like to receive a printed copy of UCCEE news or an e-mail with text-only, please contact Maria Andreasen under maria.andreasen@risoe.dk or fax: +45 46 32 19 99 or phone +45 46 32 22 88. For all other information contact the editors.

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UCCEE at Risø National Laboratory, Denmark supports the United Nations Environment Programme (UNEP) in pursuing its aim of incorporating environmental aspects into energy planning and policy world-wide, with special emphasis on developing countries. UCCEE works catalytically, encouraging, promoting and supporting research by local research institutions, coordinating projects and disseminating information, as well as carrying out a full in-house research programme in close collaboration with colleagues at Risø National Laboratory - the main public scientific research institute in Denmark.