

# AFRETEP Project

## Newsletter of the 13<sup>th</sup> December 2011

### EASTERN AFRICA REGION AFRETEP PROJECT WORKSHOP

#### EDITORIAL

Kampala, the capital of the “Pearl of Africa” was the venue for the above mentioned workshop from 3<sup>rd</sup> to 7<sup>th</sup> October 2011. Organised by the Joint Research Centre in Ispra – Italy, supported by the European Union Energy Initiative and hosted by CREEC – Centre for Research in Energy and Energy Conservation the workshop was a great success.

It brought together 32 people from 17 different countries. Facilitators from Italy, Spain and Tanzania took the participants onto a journey starting with GIS – Global Information System in the first day by Dr. Thomas Huld, followed by a very interactive Solar Photovoltaic session Dr. Xavier Vallvé from Spain. The third day was dedicated to Small hydro power applications. The facilitator was Emmanuel Gabriel Michael from UNIDO Tanzania whose expertise and depth of knowledge made the day look like a couple of hours.

Thursday the 6<sup>th</sup> was set aside for a powerful visit to a biomass gasification plant some 80 Km away from Kampala near a city called Jinja. The owners of the combined heat and power plant are Kakira Sugar Works. They produce about 25 MW of electric power by burning the sugar cane bagasse. Each and every step of the process was made part of the scientific trip and the workshop participants were given the opportunity to clarify doubts and take their notes. The plant serves the local community working around the plant and has about 12 MW to spare which is sold to the local utility at a very good price.

The last day was the platform for an in-depth analysis of measurements in a PV laboratory. This was given by Willem Zaaiman who had just arrived from the US the day before to give this part of the training. The workshop last technical training consisted of a tour through the various facilities of CREEC. Karsten Bechtel, head of the Bioenergy department, helped by Steffen Wassler from the solar division and Susan Abbo from small hydro gave participants a very interesting view on how a applied technology energy centre works in the sub-Saharan Africa.

The certificates were awarded by the organizer from JRC Umberto Tromboni, from DG-DEVCO Rainer Hakala and the undersigned. The organizing team

on the ground: Magda Bouhadi from CECOFORMA, Liz Kaijuka-Okwenje, Tryphosa and Vianney from CREEC are to be given praise as they were all the time making sure details of comfort and efficiency were achieved.

The next workshop was to take place in November in the capital of Burkina Faso Ouagadougou. As we hope for a second successful event we cannot feel a little uneasy as the standards were set so high.

As a conclusion we should say that each participant went back to his/her country with a wealthy of knowledge which they will try to convert into action to improve the use of renewable energy amongst their fellow citizen.

*Prof. Izael Pereira Da Silva, Director of CREEC*

#### EU DELEGATION TO UGANDA

Good Morning Ladies and Gentlemen,

On behalf of the Delegation of EU in Uganda, I want to warmly welcome you to Eastern Africa Region AFRETEP project workshop.

We look forward to working with you all during this workshop and establish ideas on which we can work together to promote the use of sustainable energy in Uganda and the Eastern Africa Region.

#### 1. Intro on Ugandan energy supply and electrification rate

Traditional biomass dominates the energy supply and consumption with 92 % (especially for cooking), followed by petroleum (6%) and electricity (2%) according to the GIZ country report of 2009.

The country has 387 MW installed capacity in hydropower, 160 MW in thermal power plants, and 18 MW from cogeneration in sugar industries.

The grid faces regular load shedding, since the demand outnumbers the available capacity.

The electrification rate is quite low with only 9 % of the population having access.

Only 3% of the rural population has access to electricity against 42 % in the Entebbe-Kampala areas.

#### 2. Renewable energy in Uganda

Uganda has a variety of renewable energy resources, but up to now, only large hydro resources along the Nile have been developed to some extent to provide electricity through a national grid. Other available resources have remained largely untapped: small hydro, biomass, solar, wind and geothermal sources.

A general energy plan for Uganda, which had among its objectives an increase in the use of modern renewable energy, was launched in 2002 (MEMD 2002). A renewable energy policy for Uganda was approved by cabinet in March 2007.

Uganda's ambitious policy goal for renewable energy aims to increase the use of modern renewable energy from the 4% in 2007 to 61% of the total energy consumption by the year 2017 (MEMD 2007). The expected results are to increase the generation capacities in the period 2007 – 2017 with the following figures:

- (i) hydropower from 380 to 1200 MW,
- (ii) small hydropower from 17 to 85 MW,
- (iii) cogeneration from 15 to 60 MW,
- (iv) geothermal from 0 to 30 MW,
- (v) municipal waste from 0 to 30 MW.

The EU is exploring the potential of Wind Power Generation in Karamoja. In neighbouring Northwest Kenya, Lake Turkana Wind Power project (LTWP) will provide 300 MW taking advantage of a unique wind resource in Northwest Kenya. The EU and GoU will explore together the possibility of setting up wind inventory stations.

### 3. Rural Electricity Access

We should promote the use of small hydro, biomass, solar and wind to enhance electricity access to rural populations. Special packages to make connections and services affordable are required and the EU is working in this direction through supporting the development of independent grids supplied by micro and pico hydros and biomass gasifiers to be managed by communities and solar PV systems in dispersed remote settlements.

We will prioritize supporting electrification for productive uses and key social services.

### 4. EU Energy Facility Project in Uganda

Three EU projects are presently ongoing under the Energy Facility:

- PAMENU, Providing Access to Modern Energy in Northern Uganda (PAMENU) implemented by GIZ:

Provide access to modern energy services (energy packages) to rural households, social institutions as well as SMEs in the target districts of Moyo, Yumbe, Apac, Lira, Arua. EU funding: EUR 2,400,000

(60.58%) total cost of the action: EUR 3,961,403. Duration: 40 months (End of January 2008 to end of May 2011).

#### Main Activities of PAMENU:

Rural electrification in West Nile:

(i) Solar-PV systems for Households, Institutions and SMEs

(ii) Yumbe District Solar Street Lighting

(iii) Development of Micro- hydro & Pico-hydro power (A model that can be replicated using local capacity).

Improved Stoves in West Nile: GIZ supports three local NGOs in Arua, Yumbe and Moyo districts in the dissemination of improved household stoves particularly the mud rocket and rocket lorena. By end of July 2011, a total of 92,258 household mud stoves had been disseminated. Additionally, through 1 Public-Private Partnership contract with a local firm (Prime Energy and Energy Savers Ltd - PEES) 16,119 improved charcoal and 97 metal rocket firewood stoves were disseminated to households in Arua and Koboko districts.

- Project 2: Energy efficient stove project, implemented by the Church of Sweden:

Increase access to efficient stoves among rural households in Northern Uganda - Kitgum and Pader districts (48 months) worth EUR 953,390.00 has been signed by the Delegation on 26/09/2011.

- Project 3: Micro-finance/energy enterprise partnerships programme, implemented by Triodos Facet BV:

Expanding Sustainable Energy Markets through Microfinance -Energy Enterprise partnerships (48 months) amount EUR 633,695.00 was concluded on 01/09/2011.

Furthermore, a €3.225 Million grant from the Energy Facility Pooling Mechanism could soon be awarded to a proposal from KfW "Fostering Access to Modern Energy Services in Rural Uganda - Investment Program West Nile". The EU and GoU will explore together the possibility of setting up wind inventory stations.

The EU and most vulnerable Developing Countries working together to tackle climate change, initiated in 2007 by the European Commission, the Global Climate Change Alliance (GCCA) intends to deepen dialogue, cooperation and enhance support on climate change between the European and poor developing countries.

## 5. Conclusion

We welcome this EC training initiative for experts in energy and we hope that this workshop will be the starting point for new initiatives in the renewable energy sector between the GoU ministries and agencies, the academic institutions and the development donors active in this field.

We look forward to hearing from you practical proposals that can be implemented using local knowledge, capacities and materials.

I live you now to the next speaker.

Thank you.

*Mr Luca Arras, Programme Officer - Infrastructure Section, Delegation of the European Union to Uganda*

See also the video in AFRETEP WG CAPACITY BUILDING menu.

### **RURAL ELECTRIFICATION AGENCY**

The video of Mr. Benon Bena's speech, PVTMA Officer at Project Planning Department, appears in AFRETEP WG CAPACITY BUILDING menu.

### **EU DEVCO-EUROPAID DG**

The video of Mr. Rainer Hakala's speech, Policy Officer, appears in AFRETEP WG CAPACITY BUILDING menu.

### **EU JOINT RESEARCH CENTRE DG**

Dear colleagues,

The project "African Renewable Energy Technology Platform" is honoured to welcome you at the first workshop on the application of renewable energy to rural electrification in Africa.

Let me introduce briefly the project and the organizations involved in its implementation.

The AFRETEP platform is one of three activities of a wider project of the European Commission named: "Scientific and Technical Support to Sustainable Energy Development in Africa: Rural Electrification, Renewable Energy and Communication" (RENAF).

AFRETEP's main goal is to support the development of rural electrification in Africa through renewable energy. Thus, the human and financial

resources mobilised by the project are employed in the following activities:

- building a network of African research centres, universities, NGOs, companies and other organizations;
- building a network of African and European stakeholders;
- facilitating the scientific, technologic, socio-economic and financial information sharing and exchange;
- collaborating on building the African experts' capacity on renewable energy;
- giving access to the JRC Renewable Energy Unit's knowledge on solar, biomass and energy efficiency.

RENAF is a joint initiative of EuropAid Development and Cooperation and the Joint Research Centre, which are both Directorate General of the European Commission. The Renewable Energy Unit of the Institute of Energy and Transport of the JRC in Ispra is in charge of the implementation of the project.

The AFRETEP platform, through the RENAF project, works together with the European Union initiative "Energy Initiative for Poverty Eradication and Sustainable Development (EUEI)". EUEI focuses on the important role of energy access in poverty alleviation, contributing to all the initiatives established world wide for the achievement of the Millennium Development Goals.

The EUEI started on 2002, in Johannesburg, at the World Summit for Sustainable Development and is a joint commitment of the Member States of the European Union and the European Commission.

On behalf of the Renewable Energy Unit of the Institute for Energy and Transport of the Joint Research Centre, I would like to thank all the participants and hope that we all benefit from this remarkable opportunity to share experience and knowledge.

As a follow-up of this workshop, the Joint Research Centre looks forward to receiving some of you in its Italian headquarters, if you wish to extend your know-how and develop scientific research projects in renewable energy.

Once again, welcome and enjoy the workshop.

*Mr Umberto Tromboni, AFRETEP Coordinator, EU Joint Research Centre, Institute for Energy and Transport, Renewable Energy unit*

See also the video in AFRETEP WG CAPACITY BUILDING menu.