

## INTERNATIONAL WORKSHOP SMALL SCALE BIOMASS SYSTEMS FOR ELECTRICITY GENERATION and DECENTRALISED ENERGY SERVICES

Universitat Politècnica de Catalunya (UPC). Barcelona, SPAIN

15<sup>th</sup> – 16<sup>th</sup> November 2010

### Background

Over the last decade, electricity generation from biomass has gained progressive interest and institutional support at the European Union level. At the same time, decentralized electricity systems based on renewable energy sources are increasingly used in rural electrification worldwide as a competitive alternative to conventional grid-extension.

The GRECDH research group of the Technical University of Catalonia (UPC) has a working group specialized in renewable energy systems within the Sustainable Energy research area. In parallel to the training and dissemination activities, this group is currently undertaking applied research on small scale (up to 500kW) *modular gasification schemes* as a technological solution to harness the energy potential from unused local agricultural and forestry residues.

### Objectives of the workshop

- Networking within Spanish and Catalan biomass to electricity sector.
- Sharing international experiences, case studies and lessons learnt.
- Dissemination within UPC community.

**Venue:** ETSEIB (School of Industrial Engineering) UPC Campus, Barcelona, Spain.

- Address *Campus Diagonal Sud. Edifici PI (Pavelló I)  
Av. Diagonal, 647. 08028 Barcelona (SPAIN)*
- How to arrive: <http://maps.upc.edu/?iU=412&lang=en>

### With the support and collaboration of:

 European Commission. External Cooperation Programmes	 Centre de Cooperació per al Desenvolupament. CCD UNIVERSITAT POLITÈCNICA DE CATALUNYA
 Siguem Sostenibles 2015 UNIVERSITAT POLITÈCNICA DE CATALUNYA	 Escola Tècnica Superior d'Enginyeria Industrial de Barcelona UNIVERSITAT POLITÈCNICA DE CATALUNYA
 Comissionat de Sostenibilitat, Cooperació i Desenvolupament UNIVERSITAT POLITÈCNICA DE CATALUNYA	 Escola Tècnica Superior d'Enginyers de Camins, Canals i Ports de Barcelona UNIVERSITAT POLITÈCNICA DE CATALUNYA
 Fons Europeu de Desenvolupament Regional "Una manera de fer Europa"	 ACCÍO CIDEM   COPCA
 Generalitat de Catalunya	European Regional Development Fund (ERDF) of the European Union in the framework of the Catalonia Operational Programme, and ACCÍO (CIDEM   COPCA), Generalitat de Catalunya.

## Agenda

### Day 1 Technologies – Monday 15<sup>th</sup> November (15:30 to 19:00)

Time	Topic	Speaker
10'	Registration	-
20' (to 16:00)	Welcome	UPC Commissioner for Sustainability Dr Agustí Pérez-Foguet
		GRECDH Dr Enrique Velo
20'	Context: Energy demand and supply	GRECDH UPC – Sustainable Energy Mr Pol Arranz
20'	Biomass availability estimation at territorial level and limitations for small CHP gasification units	CTFC Centre Tecnològic Forestal de Catalunya Mr Ignacio Lòpez – Mr David Solano
20'	Overview of small scale biomass to electricity technologies	GRECDH UPC – Sustainable Energy Dr Enrique Velo
10'	Q/A (questions & answers)	-
20' (to 17:30)	Coffee break	-
20'	Electricity generation from biomass experience in Spain	CIEMAT Ministerio de Ciencia y Tecnología Dr Raquel Ramos
20'	Biomass small scale gasification systems	GRECDH UPC – Sustainable Energy Ms Mar Pérez Fortes
20'	Experience in rural electrification with biomass systems in India	ANKUR (India) Mr J Ankur
30' (a 19:00)	Pilot plant biomass gasification GRECDH-CEPIMA + Q/A	CEPIMA-UPC

**Day 2 – Policy, Planning, Financing – Tuesday 16<sup>th</sup> November (15:30 to 19:00)**

Time	Topic	Speaker
15:30 - 10'	Registration	-
20' (to 16:00)	Summary of previous day	GRECDH UPC – Sustainable Energy
20'	Context: Access to modern Bioenergy systems in Africa	KNUST Kwame Nkrumah University of Science and Technology (Ghana) Dr Ahmed Addo
20'	Mechanisms for private sector involvement and PPP	ACC10 (Generalitat de Catalunya – Catalan Government) Mr Isidre Sala
20'	Business models for energy services	GRECDH – Economics for Development Mr Frederic Horta
10'	Q/A	-
20' (to 17:30)	Coffee break	
20'	Potential on Biomass Stand-alone energy systems in Mozambique	UEM Maputo (Mozambique) Dr Alberto Tsamba
20'	Financial study of biomass fuelled plants	Energrup Mr Joan Fornieles
20'	Successful management schemes in rural areas: - MFP projects in West Africa	KITE Ghana Mr Ishmael Edjekumhene
20'	- PA projects in Peru	Practical Action (UK, Peru) Dr Teo Sanchez
10'	Q/A	
19:00	Closing of workshop	GRECDH UPC – Sustainable Energy Dr E Velo / Mr P Arranz