

LAMNET Global Network on Bioenergy - Results and Outlook

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International Workshop 'Bioenergy for a Sustainable Development'
LAMNET Project Workshop, 8-10 November 2004, Viña del Mar, Chile

LAMNET – A Global Network on Bioenergy

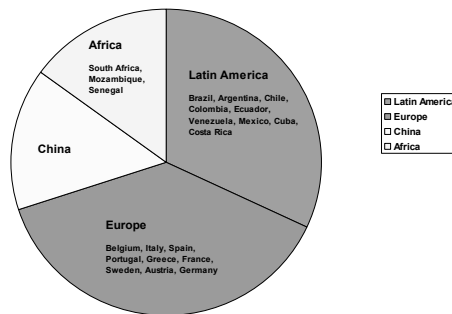
- Network of 48 institutions from 24 countries
- Transnational forum for the promotion of sustainable use of biomass (**Bioenergy Technologies and Policies**)
- Funded by the European Commission within the programme 'Confirming the International Role of Community Research' (Jan 2002 – Dec 2004)
- Coordinated by WIP, Germany, in partnership with ETA, Italy and the European Biomass Industry Association, EUBIA
- Latin American organisations CENBIO, Brazil and UNAM, Mexico act as coordination support points



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LAMNET Membership

48 Partners, more than 130 Associate Partners (status September 2004)



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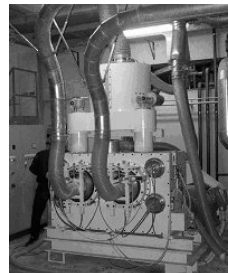
Global Bioenergy Network - Objectives

- to address the adequate utilisation of **biomass residues and energy crops**
- to make use of selected **reliable and proven practical technologies and systems**
- to arrive at **local, regional, national and international solutions** for bioenergy applications
- to contribute to **poverty alleviation and sustainable development**
- to **develop and implement policies** for the enhanced utilisation of biomass and bioenergy

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International Co-operation on Bioenergy Technologies

- Co-generation of **Heat and Electricity** based on sugar cane bagasse and other suitable biomass resources
- Large-scale implementation of **biofuel production** (sugar cane, sweet sorghum, agro-forestry residues); Creation of a **global biofuel market**
- Promotion of **small- and medium-scale decentralised bioenergy systems**
 - Advanced **pelleting technologies**
 - **Micro-turbines** for co-generation
 - **Micro-distilleries** for ethanol production,
 - Efficient biomass **cooking stoves**



Pelletiser machine, Italy

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International Co-operation on Bioenergy Policies

- **Involvement in major international events on Renewable Energies and Sustainable Development**
 - European Conference for RE – Intelligent Policy Options, Berlin, Jan. 04
 - International Conference for Renewable Energies, Bonn, June 2004
- **Networking with organisations, institutions and multilateral initiatives**
 - Global Forum on Sustainable Energy (GFSE)
 - Global Network on Energy for Sustainable Development (GNSD)
 - IEA Bioenergy
 - Food and Agriculture Organisation of the United Nations (FAO)
- **Monitoring/support of national and regional policy initiatives**

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Bioenergy Case Study – Brazil

Proalcool – Brazilian Alcohol Program

- Created in 1975 (first oil crisis)
- Gasoline contains 20-26% of anhydrous ethanol
- Ethanol production in Brazil: 14.7 billion l/a (03/04)
- Ethanol export: 1.1 billion l/a (2003/2004)
- Hydrated ethanol: 60-70% of gasoline price (2004)
- CO₂ Abatement (1996): 12,7 million t/a
- Total employment in sugar/ethanol sector: 3.6 million
- New Development: **Flex Fuel Vehicles**

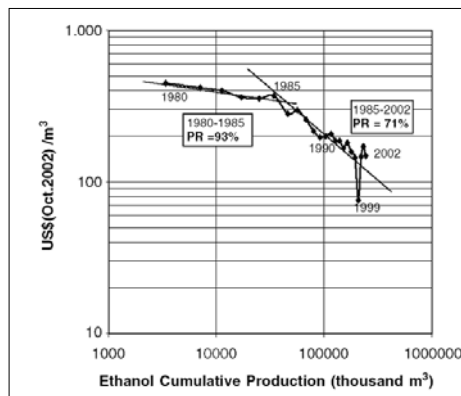


LAMNET Partners: CENBIO, Copersucar, UNICA



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Brazil – Ethanol Learning Curve (Proalcool)

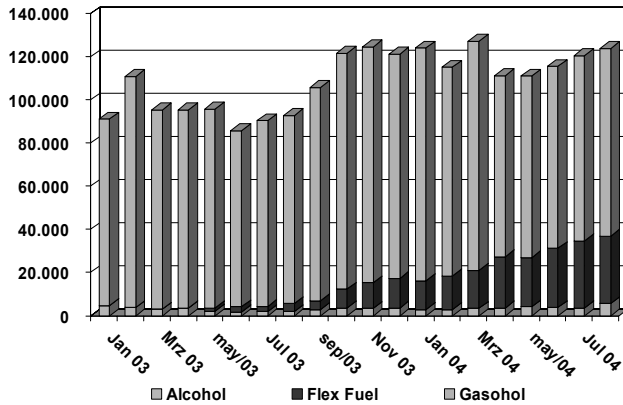


- **Total Investment 1975-1989**
5 billion US\$
- **Total Oil Import Savings 1975-2002**
50 billion US\$

Source: CENBIO,
Sao Paulo State
Environmental Secretariat

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Brazil – Flex Fuel Vehicle Sales



Manufacturers

- FIAT, Ford
- GM, VW
- DC, Audi, Honda, Toyota, Volvo, Nissan, Renault, Skoda, Peugeot

Forecast:

- 67% Market Share (> 2007)

Source: ANFAVEA

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Global Bioenergy Network – Activities LAMNET Workshop in Ribeirão Preto, Brazil, Sept. 2004

Key Topics of Interest

- Pelleting Technologies for Sugar Cane Bagasse
- Ethanol Production from Lignocellulosic Feedstock
- Flexfuel Vehicles
- Global Bio-ethanol Trade
- Bio-diesel Production and Utilisation

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Bioenergy Case Study – Colombia



National Alcohol Program for Colombian Gasolines

New law (2001) mandating the blend of bioethanol (10% volume) with gasoline and diesel fuel by 2006

- Increase in harvested sugar cane: 150.000 ha
- Construction of 9 bio-refineries (each 200.000 – 250.000 l/day)
- Employment Impact: Creation of 170.000 new jobs

Invitation to private investors (national and int.) to participate in the production of fuel ethanol in an open market

- Investment: 400 million US\$; Tax exemption for bioethanol
- CER's through CDM

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Bioenergy Case Study – Mexico



Mexican Network on Bioenergy – Red Mexicana de Bioenergía

Logo of newly established Mexican Network on Bioenergy

- First national forum to catalise projects, information exchange and activities in the field of bioenergy
- Launched at the International Seminar on Bioenergy and Sustainable Rural Development (LAMNET WS) in Morelia, 26-28 June 2003
- Based within the National Solar Energy Association of Mexico (ANES)
- Co-ordinated initially by LAMNET partner Dr. Omar Masera, UNAM
- First Annual Meeting of Mexican Network on Bioenergy in October 2004

ANES



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Bioenergy Case Study – Venezuela

Workshop on Biomass Opportunities in Venezuela – LAMNET Project Workshop

in Caracas, Venezuela, 22 October 2004

co-organised by the LAMNET Partner
Fundacion Momento de la Gente (FMG)



First Bioenergy Workshop in Venezuela!

LAMNET Project provides International Bioenergy Expertise

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Bioenergy Case Study – China

Objective of RE Development in China

- 5% RE contribution to the total national energy consumption by 2010
- 10% RE contribution by 2020

Key Biomass Resources

- Household biogas digesters (13 million units)
- Large/medium scale biogas plants (2200 units)
- Biomass based power generation (> 2 GW) using bagasse, rice husks, wood processing waste, municipal solid waste
- Liquid biofuels (bio-ethanol, bio-diesel)



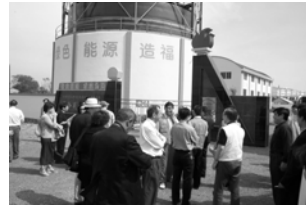
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International Cooperation – China

Opportunities for Industrial Cooperation Activities, Technology Transfer and Joint-Ventures in partnership with the European Biomass Industry Association (EUBIA)

Biomass Technology Applications

- **Bio-gas Plants for Rural Development**
- **Straw Gasification Technology**
- **Pelleting Technologies**
- **Ethanol Production from Lignocellulose**



LAMNET Partners: CAREI, CREIA, Beijing Green Energy Institute, Shenyang Agricultural University, CEEP, Ministry of Science and Technology

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Global Bioenergy Network – Activities

- **LAMNET Roundtable – Biomass for a strategic Energy Supply in China**
3 November 2004, Beijing, China
- **EU-China Workshop on Liquid Biofuels**
organised by EC DG Research and MOST, China
4-5 November 2004, Beijing, China
- **Liquid Biofuel Cooperation Demonstration Project**
Combined bio-ethanol and synthetic diesel production from biomass feedstock



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Bioenergy Case Study – South Africa

White Paper on the Promotion of Renewable Energy (Aug. 2002)

→ Department of Minerals and Energy (DME)

10-year Target for Renewable Energy

- Additional 10.000 GWh RE contribution to energy consumption by 2012
- Biomass, wind, solar and SHP
- Capacity: 4.000 MW
- Total Investment: 4-6 billion US\$

Impact on Global Climate Change: CO₂ Abatement: 10 million t

Starting Point: 'Early-win' Investments

- Biomass based co-generation, Solar water heating, Wind

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Policy Initiative – Southern Africa



'Policy Dialogue' Workshop on Cogeneration and Bioethanol for Southern Africa, 21 – 23 June 2004, Durban, South Africa

Concept

Presentation of Successful Bioenergy Experiences (Brazil, Germany) to
South African Stakeholders

Participation

- Department of Minerals and Energy, ZA
- Department of Trade and Industry, ZA
- Department of Science and Technology, ZA
- Department of Agriculture, ZA
- CENBIO, Brazil and German Biofuel Association



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South African Policy Dialogue – Results

POLICY RECOMMENDATIONS

Establishment of a South African Bioenergy Association

- Platform for bioenergy stakeholders
- Focal point for the collection of clear and reliable data/information
- Biomass potential evaluation for key South African industries
- Close cooperation: Industry - Government

Establishment of an International Clearinghouse for Household Bioethanol

Inclusion of 'energy issues' in the South African Development Strategy

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South Africa – Bagasse Pelletizing Technologies

Great opportunity for the production of high-value chemicals and 'green energy' in bagasse based cogeneration plants

Objective:

- Reduction of biomass transportation costs
- Production of bagasse pellets suitable for chemicals extraction (low-temperature pelleting process)

Project developers

- Illovo Sugar Ltd., South Africa, WIP – Renewable Energies, Germany

Technical/industrial players

- CPM Europe b.v., The Netherlands, Amandus Kahl GmbH & Co, Germany

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LAMNET Dissemination Activities

- LAMNET Project Web site: www.bioenergy-lamnet.org
- LAMNET Project Newsletter (2 issues per year)
- Bioenergy Thematic Leaflets
 - Bioenergy Village Complex
 - Pellets and Briquettes; Biomass Gas Generators
 - Liquid Biofuels
- Organisation of LAMNET Project Workshops
 - In 2002: The Netherlands, South Africa, Brazil
 - In 2003: Mexico, China, Cuba
 - In 2004: China, Italy, Brazil, Venezuela, Chile



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LAMNET Associate Membership

The Associate Membership

- facilitates the involvement of other interested organisations

Associate Members

- will be regularly informed about events and activities of the LAMNET project
- are invited to make use of the dissemination platforms established in the framework of the LAMNET project



Latin America Thematic Network on Bioenergy -
LAMNET
ASSOCIATE MEMBER

APPLICATION FORM

Family Name _____
 First Name _____
 Firm/Organisation _____
 Address _____
 Postal Code and City _____
 Country _____
 Tel _____
 Fax _____
 eMail _____
 URL _____

Associate Members of the Latin America Thematic Network on Bioenergy will be regularly informed about events and activities of the LAMNET project.
 Associate Members of LAMNET are invited to make use of the dissemination platforms established in the framework of the LAMNET project. Money for the LAMNET project no budget can be allocated to Associate Members.

Signature _____ Date _____

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THANK YOU!



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