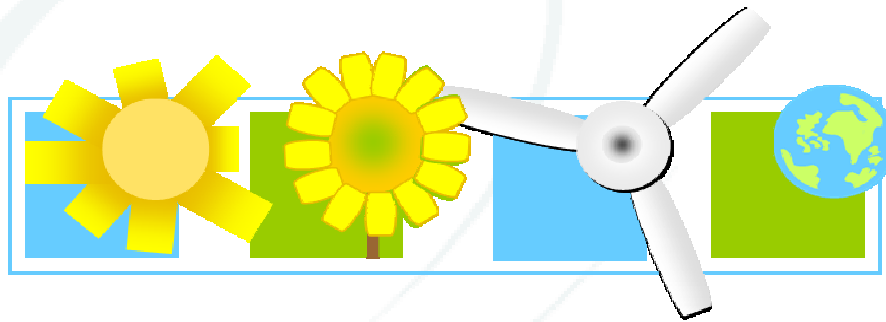


# Information day renewable energy technologies and socioeconomic tools Brussels, 19 October 2004

## Biomass - Bioenergy



# Outline

- × **Biomass and bioenergy - MTL Work Programme**
- × **Insight outcome 1<sup>st</sup> call**
- × **Topics for the opened MTL call**
- × **Bioenergy 2030**
- × **Looking ahead – FP7**



# Biomass MTL Workprogramme

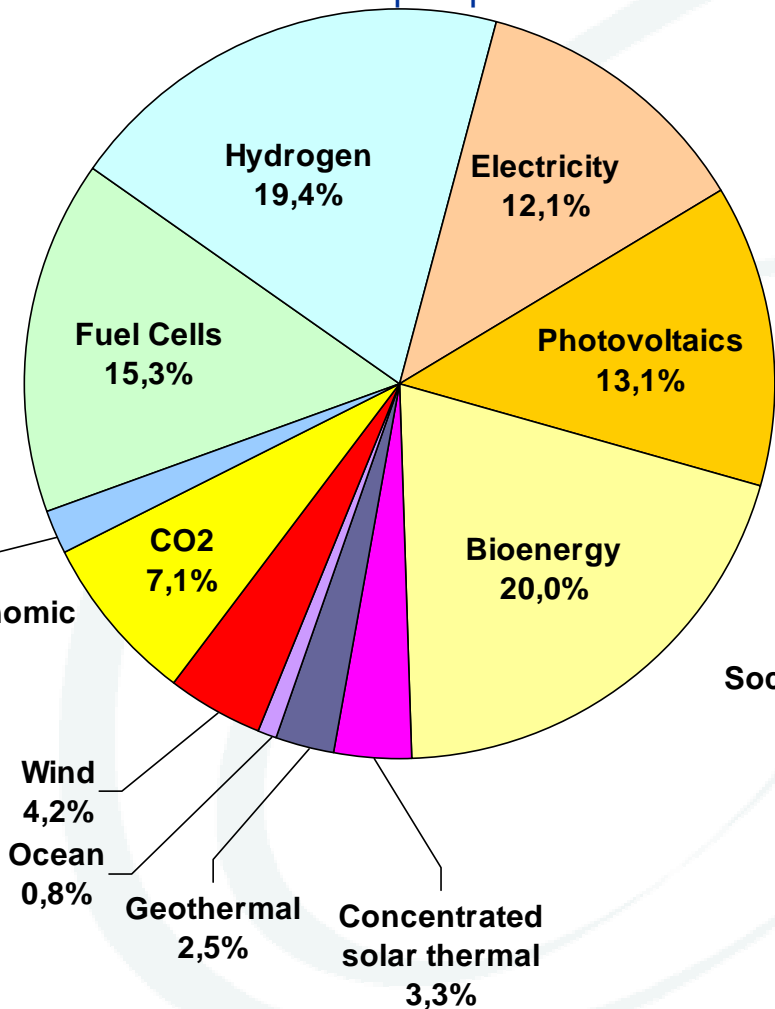
## Targets:

- Cost of electricity production from biomass < 0.05€/kWh
  - Cost of biofuels < 0.036€/kWh
- 
- ◆ **Reliable efficient and cost effective combustion technologies**
  - ◆ **Reliable and cost effective gasification systems**
  - ◆ **New methods for cost effective production of clean biofuels to be used in combustion engines and fuel cells**
  - ◆ **Prenormative research and standardisation**
  - ◆ **Energy from bio-residues and energy crops**
  - ◆ **Biomass fractionation processes (bio-refinery)**

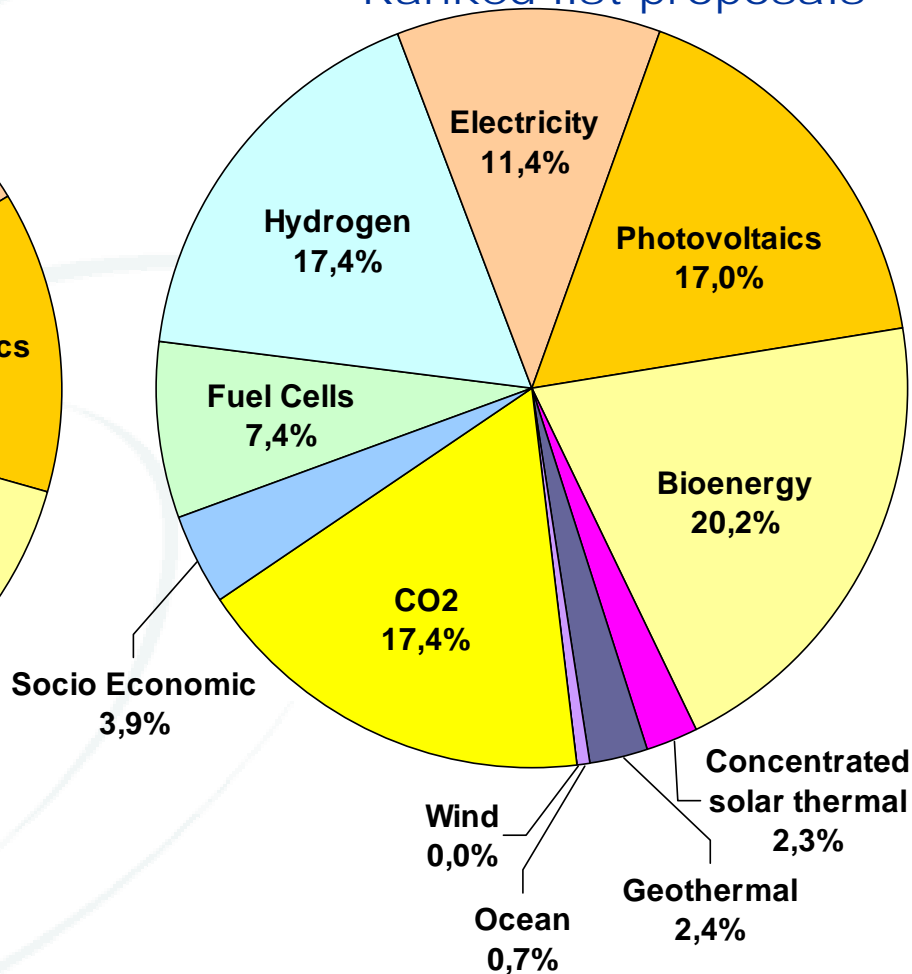


# Results 1<sup>st</sup> call EC Funding by Area

Evaluated proposals

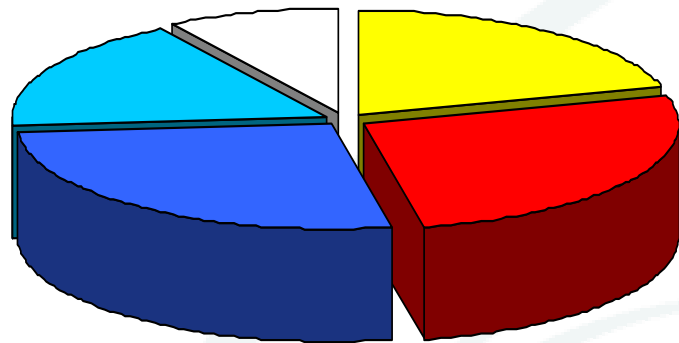


Ranked list proposals

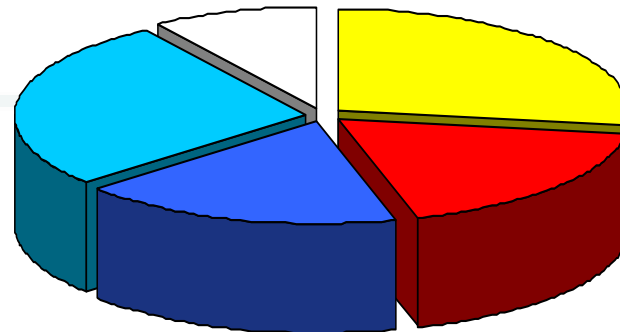


# Results 1<sup>st</sup> call Typical projects

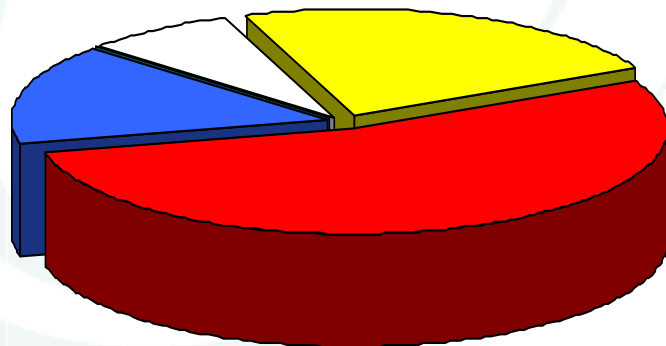
**Integrated Project**  
9 M€funding , 10-40 partners



**STREP**  
2 M€funding, 5-10 partners



**Network of Excellence**  
6 M€funding, 8-15 partners



# Biomass and bioenergy

## Topics MTL call. Sept-Dec. 2004

### IPs

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- × **Cost effective liquid biofuel production from biomass**
- × **Production of hydrogen rich gas from multiple biomass feedstock**
- × **Integrated production of energy and other products through the concept of biorefinery**

### STREPs and CA

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- × **Energy from crops**
- × **Prenormative research & standardisation**
- × **Advanced biomass gasification technologies**
- × **Co-ordination of research activities in biomass cofiring**



# Liquid Biofuels from Biomass

- ◆ **Objective**  
To explore non-thermal production of bio-ethanol from lignocellulosic feedstock
- ◆ **Research Issues**  
Process development, process optimisation from lab-scale to pilot scale, enzymatic hydrolysis, feedstock logistics, comparative assessment of lignocellulosic bio-ethanol potential
- ◆ **Instruments**  
Only open for IPs (1)



# Energy from Crops

- ◆ Objective

To develop productive low cost agricultural feedstock production systems covering the whole chain from perennial crops to energy

- ◆ Research Issues

Increased yield and improved crop characteristics, crop management and harvesting, pre-treatment, handling, logistics and conversion technologies

- ◆ Instruments

Only open for STREPS (>1)

Proposals should focus on specific crops, e.g. crops that are either relevant for Northern Europe or for Southern Europe



# Production of hydrogen rich gas from multiple biomass feedstock

- ◆ **Objective**  
To develop non-thermal processes for the production of hydrogen rich gas for use in power or biofuel production using a broad feedstock basis including bio-residues
- ◆ **Research Issues**  
Bacterial and enzymatic pathways, innovative methods to increase biodegradation yield, gas cleaning and gas quality assessment
- ◆ **Instruments**  
Only open for IPs (1)



# Integrated production of energy and other products through the concept of bio-refinery

## ◆ Objective

To cover the whole chain from various biomass-based production schemes downstream to upgraded materials and chemicals, refined fuels and direct conversion to energy in order to integrate the production of bio-energy and other bio-products (fuels, chemicals and materials) through the bio-refinery approach

## ◆ Research Issues

Integrated biomass-based production systems using advanced fractionation and conversion processes

## ◆ Instruments

Only open for IPs (1)



# Pre-normative research and standardisation

- ◆ **Objective**  
To cover pre-normative research on  
(a) a wide spectrum of liquid biofuels (incl. bioethanol, biodiesel, synfuel and others) and  
(b) solid biofuels (incl. recovered solid biofuels)
- ◆ **Research issues**  
Rapid testing, quality assessment & management, preparation of future standardisation/certification
- ◆ **Instruments**  
Only open for STREPs (>1)



# Advanced biomass gasification technologies

- ◆ **Objective**  
To develop innovative gasification technologies for efficient power production for multiple biomass feedstock.
- ◆ **Research issues**  
Feedstock handling and processing, advanced and low cost hot flue gas cleaning, gas quality assessment, process integration and optimised control systems allowing operation on varying load and feedstock properties
- ◆ **Instruments**  
Only open for STREPs (>1)



# Co-ordination of research activities in the field of biomass co-firing

## ◆ Objectives

To co-ordinate ongoing research and to promote the development and uptake of innovative methods and technologies to expand the use of biomass co-firing, both in new and in existing power plants

## ◆ Co-ordination issues

Assessment of ongoing research, identification of best practices, gaps in knowledge and barriers to implementation, to propose strategies for implementation as well as directions for future research

## ◆ Instruments

Only open for CAs (1)

**Participation of Third Countries is particularly encouraged**



# Bio-Energy 2030: Strategic RTD priorities (1)

## Biomass supply:

- ◆ Energy crops (increase yield, improve characteristics, optimal use of whole crop)
- ◆ Land use optimisation, considering secondary impacts on other sectors
- ◆ Harvesting and logistics (biomass collection, cost-efficient provision chains)
- ◆ Pre-treatment, handling and standardisation



# Bio-Energy 2030: Strategic RTD priorities (2)

## **Biomass conversion technologies (in particular at small scale)**

- ◆ Combustion technology (small-scale; automation of processes)
- ◆ Conversion technology for biofuel production (in particular from lignocellulosic feedstock)
- ◆ Gasisfication technology (for electricity and/or liquid biofuels)
- ◆ Gas-to-liquids technology
- ◆ Biogas: improve the biodegradation yield, flue gas cleaning, and gas quality
- ◆ Pre-treatment of biomass for bacterial assimilation



# Bio-Energy 2030: Strategic RTD priorities (3)

## End products:

- ◆ Ethanol from lignocellulosic feedstock; enzymatic hydrolysis; pentose fermentation
- ◆ Syngas to liquid (Fischer-Tropsch, DME, ethanol)
- ◆ Develop and optimise Biorefinery or fractionation processes to produce biofuels and valuable by-products from whole crop

## General issues:

- ◆ Sustainability of bio-energy: socio-economic research on externalities, impact on and integration into rural development, ethics and markets
- ◆ Standards; sampling and testing methods



## Looking ahead - FP7

### Six axes

- ◆ Stimulating the creativity of basic research through competition between teams at European level;
- ◆ Launching European Technology Initiatives;
- ◆ Developing research infrastructure of European interest;
- ◆ Development of human resources (scientific career, education, mobility);
- ◆ Creating European Centres of Excellence through collaboration between laboratories;
- ◆ Improving the co-ordination of national research programmes.

An online questionnaire is available together with further information at:

[http://europa.eu.int/comm/research/future/index\\_en.html#consultation](http://europa.eu.int/comm/research/future/index_en.html#consultation)



# How to submit a proposal

- ◆ Electronic submission (Acrobat pdf **only** now)
- ◆ Submission on paper
- ◆ (**no** CDRoms or diskettes any more)
- ◆ Proposal Preparation Tool **available online**
- ◆ Paper versions of forms also in the Info Pack
- ◆ **Deadlines (time and date) are absolute**



# Lessons learn from experience of first call

- ◆ **Ineligible proposals**
  - ✓ Don't delay until the day before the deadline
  - ✓ Make sure proposal is complete, not just a letter
  - ✓ Sent to the correct call
  - ✓ DG TREN or DG RTD
  - ✓ Use right forms
  - ✓ Use the right instrument (IP, STREP, CA)
- ◆ **Electronic submission – push the submit button**
- ◆ **Check with EC staff or National Contact points**



We wish you great success with  
your proposal



# Staying informed

## ◆ CORDIS:

Call for proposals: [http://fp6.cordis.lu/fp6/call\\_details.cfm?CALL\\_ID=167](http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=167)

Sustainable development : <http://fp6.cordis.lu/fp6/sustdev.htm>

Find partners: <http://fp6.cordis.lu/fp6/partners.cfm>

Prepare and submit proposals : <http://fp6.cordis.lu/fp6/subprop.cfm>

## ◆ EUROPA:

Energy research web site

[http://europa.eu.int/comm/research/energy/index\\_en.html](http://europa.eu.int/comm/research/energy/index_en.html)

## ◆ Contact Persons: Bioenergy scientific officers

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# Integrated project

## What is an IP?

- ◆ Supporting objective-driven research of an European dimension. Generating knowledge.
- ◆ Integrating the critical mass of activities and resources needed to achieve ambitious, clearly defined scientific and technological objectives
- ◆ Activities: research, technological development and demonstration, training, management of knowledge and exploitation
- ◆ Flexibility and autonomy

## Duration

- ◆ Between 3 and 5 year but longer if necessary

## Resources – Community support

- ◆ Several tens of million euro – Up to 50%

## Partnership

- ◆ At least three participants from three different MS or AC



# STREP

## What is an STREP?

- ◆ Specific targeted research projects
- ◆ Evolved from FP5 RTD research and demonstration projects
- ◆ Gain new knowledge to improve existing processes or developing new ones

## Duration

- ◆ Between 2 to 3 years, longer if justified

## Resources – Community support

- ◆ Several million euro – Up to 50%

## Partnership

- ◆ At least three participants from three different MS or AC



# Coordination Action

## What is a coordination action

- ◆ Evolved from FP5 concerted actions/thematic networks
- ◆ Promote and support networking and coordination of research organisations, initiatives or projects. Improve integration
- ◆ Arranging conferences, meetings, performing studies, etc
- ◆ Exchange and dissemination of good-practices

## Duration

- ◆ Between 2 to 3 years, longer if duly justified

## Resources

- ◆ ~ less than 1 million euro - Up to 100%

## Partnership

- ◆ At least three participants from three different MS or AC

