

FP7 Energy Research

Information Day

BIOREFINERY JOINT CALL

Brussels, 24-25 September 2008

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European Commission
*for the four Themes concerned of the
Cooperation Specific Programme*



Contents

- Concept in brief (1 slide)
- Context: Major Challenges (6 slides)
- Main related Policy Initiatives and Actions (3 slides)
- Joint Calls: general considerations (1 slide)
- Biorefinery and the 2009 WP of the four Themes involved (6 slides) :
 - 1) **Food, Agriculture and Fisheries, and Biotechnology**
 - 2) **Nano-sciences, Nano-technologies, Materials and new Production Technologies**
 - 3) **Energy**
 - 4) **Environment**
- Biorefinery Joint Call: General Aspects (4 slides)
- Call Main Topic: Collaborative Projects (3 slides)
- Associated Co-ordination and Support Action (3 slides)
- Documentation, Submission, Further Information (3 slides)



The Biorefinery Concept

Wood, crops, grasses
Forestry or Agricultural Residues
Biological Waste
Marine biomass

Heat, Electricity, Fuels
Chemicals
Materials

Biochemical
and Thermo-chemical
Conversion

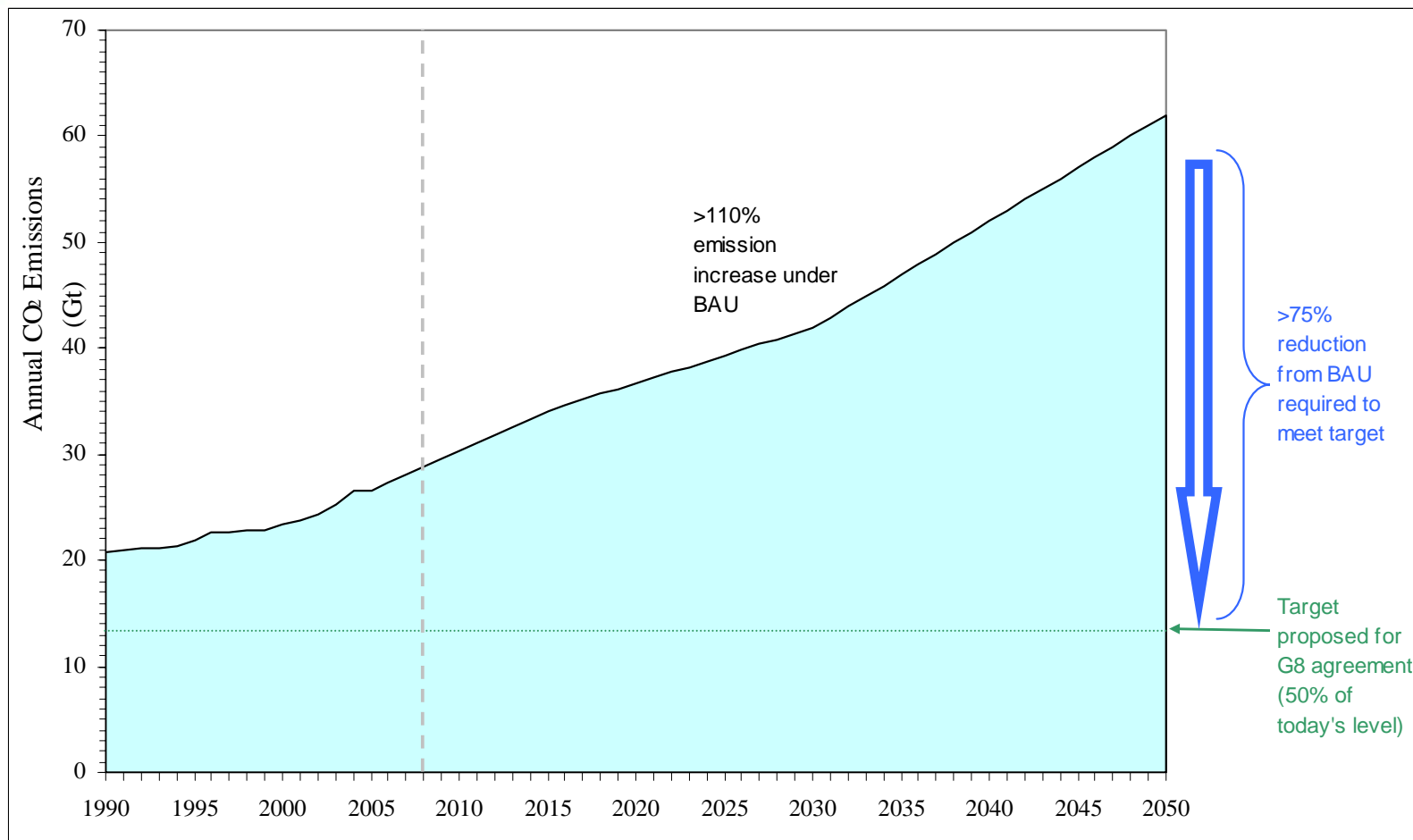


Context: Major Challenges

- **Global warming and climate change (reduction of GHG emissions)**
- **Sustainable, secure and affordable supply of energy and other resources**
- **EU competitiveness, job creation and innovation**



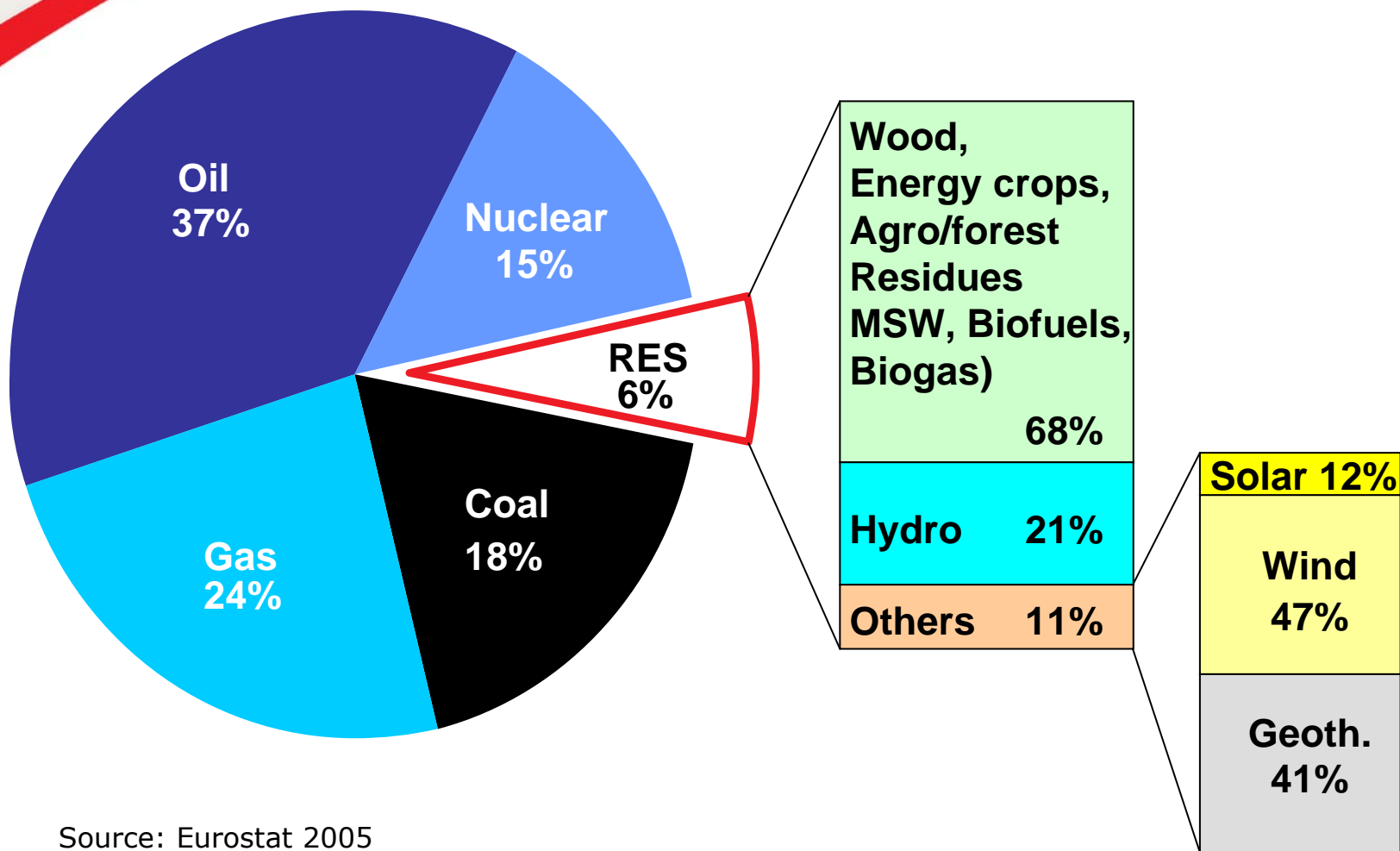
CO2 Reduction: Required Changes are Massive



•Sources: IEA "Energy Technology Perspectives 2008"; Chair's summary from G8 environment minister's meeting; Kobe, Japan; May 24-26, 2008.

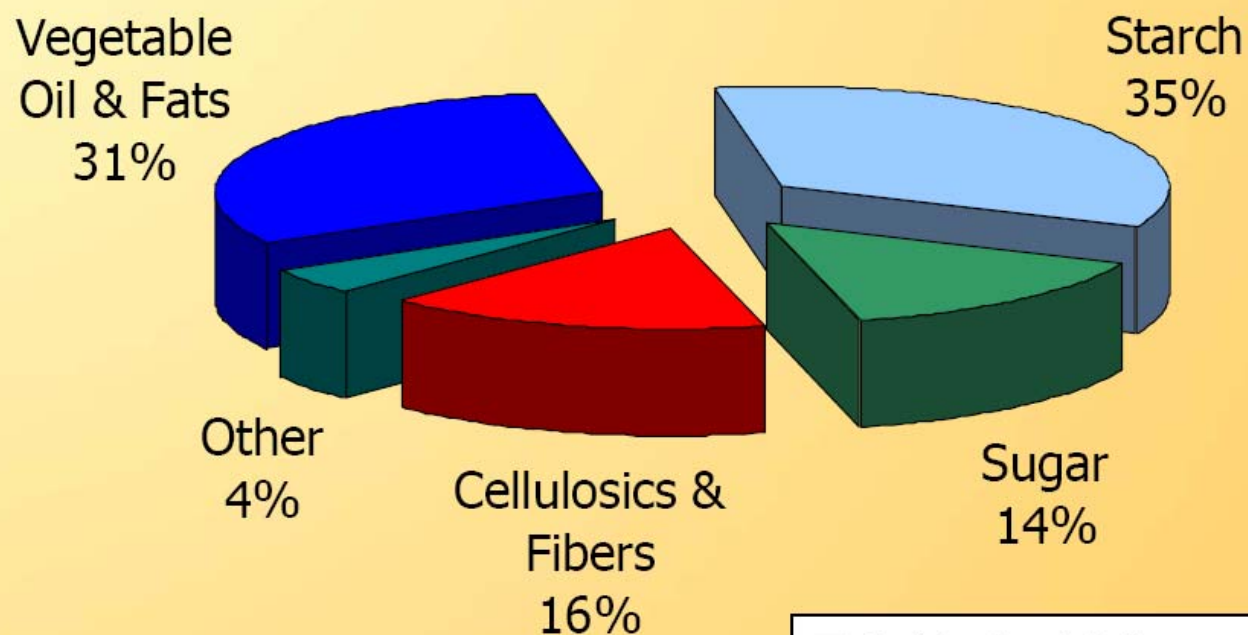


EU Energy Mix: RES share has to increase



Source: Eurostat 2005

EU-25 Industrial Use (2003)

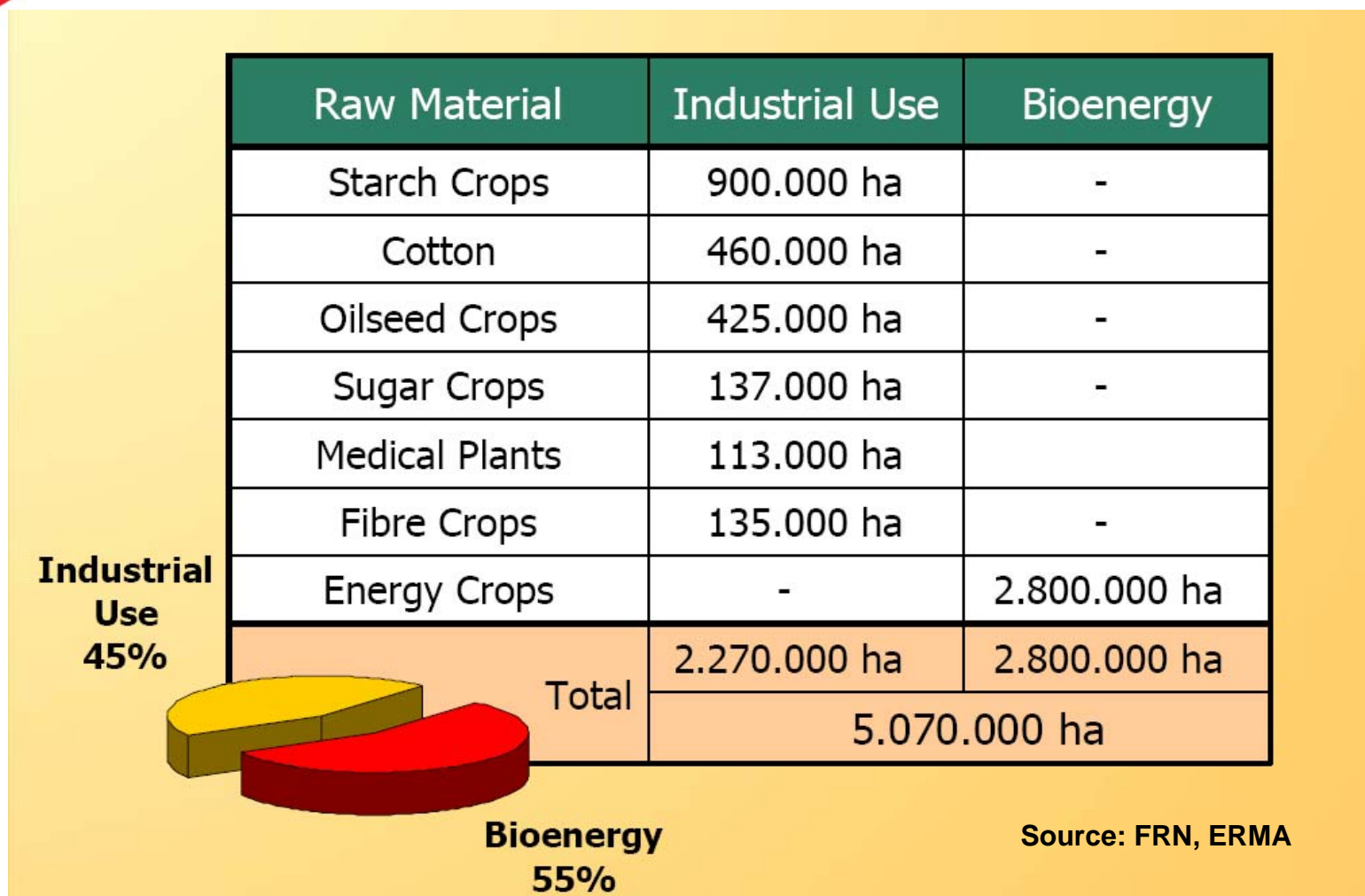


Total industrial use of RRM:
~ 9 Mio. t

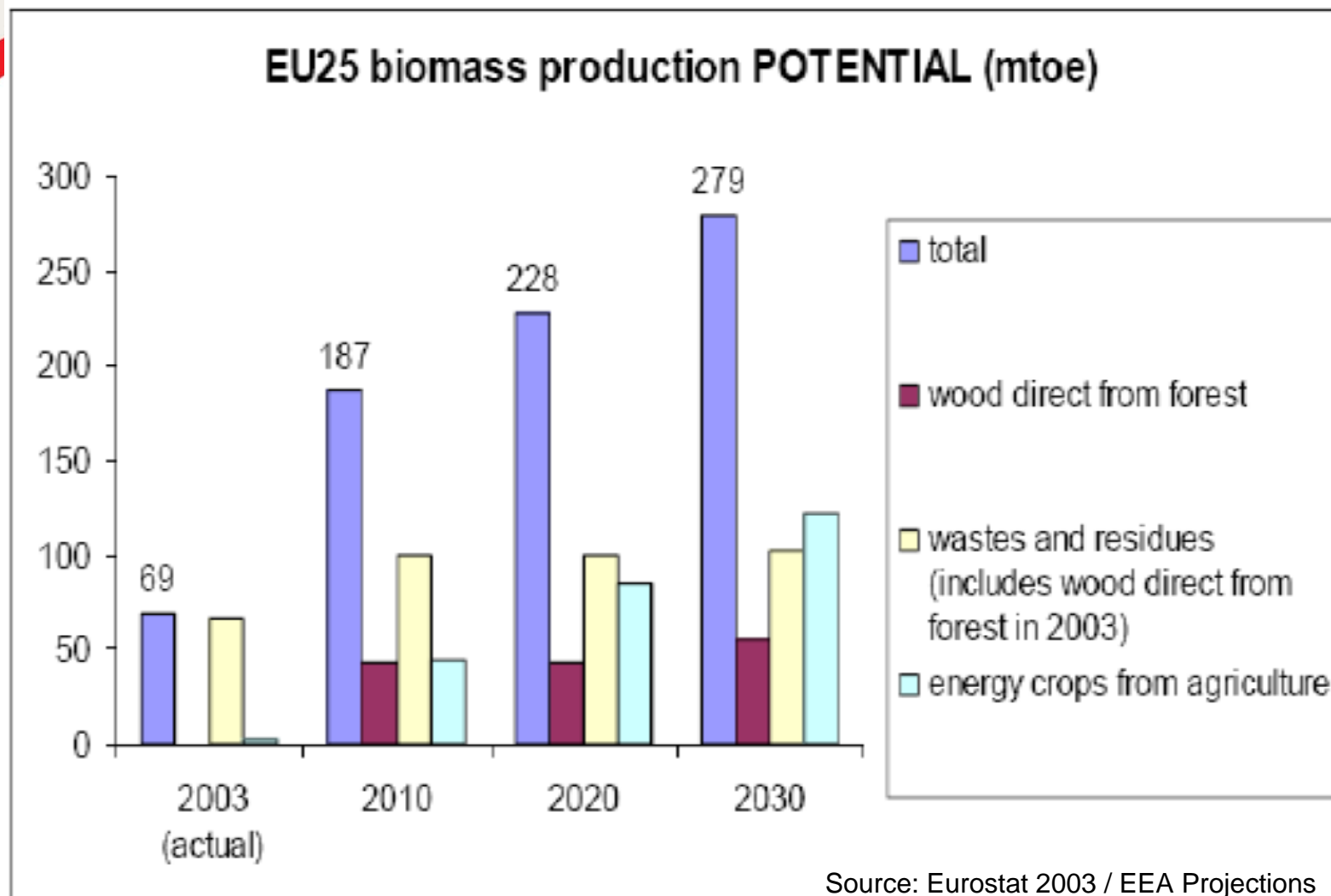
estimations based on data from:
EU, IENICA, EHGA, CIRFS, EIHA, EuropaBio, AAF, Röper, Kaup, EurObserv'ER, FAO



EU-25 Non-Food Crop Land (2005)



Availability of RR Materials



EU Most Relevant Policy Initiatives (1)

- **Lisbon Strategy (2000) and further adjustments (e.g. Wim Kok Report in 2004)** : Innovation as the motor for economic change; “learning economy”; social and environmental renewal
- **Life Sciences and Biotechnology : a Strategy for Europe (2002) and related knowledge-based bio-economy (KBBE - 2005):** Transforming the life sciences knowledge into new sustainable, eco-efficient and competitive products
- **Environmental Technologies Action Plan (ETAP- 2004) linked to the EU’s Sustainable Development Strategy:** Stimulate the development and use of environmentally friendly technologies inc. removal of barriers
- **Energy and Climate Package (2007):** Comprehensive set of policy actions and initiatives aimed at overcoming the energy and climate change challenges, inc. SET Plan (see below)



EU Most Relevant Policy Initiatives (2)

- **Lead Market Initiative (2007):** Foster the emergence of markets which are highly innovative, respond to customers' needs, have a strong technological and industrial basis in Europe and depend more than other on favourable framework conditions
- **The Strategic Energy Technology Plan (2007):** Aligning technology development with energy policy goals, through notably, the strengthening of European research capacities (European Research Alliance) and the setting up of strategic public/private RD&D partnerships (European Industrial Initiatives, including one on Bioenergy)
- **Renewable Energy Directive (2008):** Fixing a number of objectives and targets (notably the “3x20%” by 2020) and a number of “boundary conditions”: minimum 35 % GHG Savings; RE should be produced outside land with recognised high biodiversity or carbon stock value; 2nd generation count double; respect of sustainability criteria (still debated in EP and Council, will also apply to the Fuel Quality Directive)



Necessity of Life Cycle Thinking in Policy and Business

- **Avoid shifting-of-burdens**
 - from one stage in a product's life cycle to another
 - among countries, acting in a global market
 - across different environmental and health impacts
 - from one generation to another
 - across different impacts (environmental, economic, social)
- **Need for a common assessment framework:**

The JRC in Ispra is finalising the “[International Reference Life Cycle Data System](http://lca.jrc.ec.europa.eu/EPLCA/overview.htm)” (ILCD) for good practice in LCA. This is a series of technical guidance documents on best attainable consensus on Life Cycle Assessment practice in data collection, modeling, analysis, interpretation, documentation, and review

<http://lca.jrc.ec.europa.eu/EPLCA/overview.htm>



Joint Calls: Integrating Knowledge and Expertise

- Joint calls stated in Cooperation Specific Programme (notably on the realisation of the interdisciplinary nature of the issues – as confirmed by ETPs)
- A way to overcome challenges and support the implementation of EU policies
- Several topics in discussion for joint calls, building on previous experience
- **Biorefinery Joint Call**
 - Truly interdisciplinary and cross sectoral approach
 - Four DG RTD Directorates and DG TREN
 - **A challenge to both the EC and the scientific community**



EU FP7 Co-operation Specific Programme

THEMES

1. Health
2. Food, agriculture and fisheries, and biotechnology (1.9 Billion €)
3. Information and communication technologies
4. Nanosciences, nanotechnologies, materials and new production technologies (3.5 Billion €)
5. Energy (2.3 Billion €)
6. Environment (including climate change) - (1.9 Billion €)
7. Transport (including aeronautics)
8. Socio-economic sciences and the humanities
9. Space
10. Security



The Work Programme (WP)

- **WP legal basis is the Cooperation Specific Programme**, which sets the overall scope and objectives and, broadly speaking, the subjects to be covered
- **WP may be revised annually** (as required) and constitutes the basis of annual Calls for Proposals
- **WP Terminology:**
 - ➔ Theme
 - ➔ Activity
 - ➔ Area (stable throughout FP7, but with flexibility)
 - ➔ **Topics** (subjects open for proposals in the calls, only in the year in question) – Same in all four Themes regarding this joint call



Relevant activity in “Food, agriculture and fisheries, and biotechnology”

Sustainable production and management of biological resources from land, forest and aquatic environments

“Fork to farm”: Food (including sea-food), health and well being

Life sciences, biotechnology and biochemistry for sustainable non-food products and processes



Relevant activity in “Nanosciences, nanotechnologies, materials and new production technologies”

Nanosciences and
Nanotechnologies

Materials

New production

Integration of technologies
for industrial applications



Relevant Activity in “Energy”

Note : 10 “activities” implemented jointly by DG RTD and TREN

Hydrogen and fuel cells

CO2 capture and storage
technologies for zero
emission power generation

Renewable
electricity
generation

Clean coal
technologies

Renewable
fuel production

Smart energy
networks

Renewables
for heating and cooling

Energy savings
and energy efficiency

Knowledge for energy policy making

Horizontal Programme Actions



Relevant activity in “Environment including climate change”

Climate change, pollution
and risks

Sustainable management
of resources

**Environmental
Technologies**

Earth Observation and
Assessment tools for
sustainable development

Horizontal Actions



Biorefinery Joint Call: Modalities Overview

- **Topics description** identical in the four thematic work programmes
- **Formal opinion** of Specific Configuration of the Programme Committee "Cooperation" based on agreement of the four Thematic Configurations of the PC
- **Submission** of ONE proposal to only ONE of the four Themes referred in the call fiche (free choice)
- **Task Force** - logistical aspects, joint evaluation and S&T follow-up, notably assessment of periodic and final reports
- **Administrative/financial/legal/ contractual matters**
Lead DG and Directorate and a single Authorising Officer (based on TF assessment of project reports)
- **Report** to the four Thematic Configurations of the PC on the evaluation outcome and later on progress of projects



Biorefinery Joint Call: Task force

- **Task force supervisor**

- Zoran Stančić, DG RTD Deputy Director General for scientific matters

- **Leading DG, Directorate and Single Authorised Officer**

- DG RTD Directorate K "Energy", Raffaele Liberali, Director

- **Task Force members**

- Alfredo Aguilar, Maria Fernandez, Piero Venturi (DG RTD/E)
- José-Lorenzo Vallés, Frédéric Gouardères (DG RTD/G)
- Andrea Tilche, Michele Galatola, Peter de Smedt (DG RTD/I)
- Bruno Schmitz, Maria Georgiadou, Jose Ruiz Espi (DG RTD/K)
- Stefan Tostmann, Kyriakos Maniatis, Anthi Charalambous (DG TREN/D)



Biorefinery Joint Call: Budget

- **Total € 57 Millions EC contribution**
 - Theme 2 - Food, Agriculture and Fisheries, and Biotechnology - € 10 M
 - Theme 4 - Nano-sciences, Nano-technologies, Materials and new Production Technologies - € 7 M
 - Theme 5 - Energy – € 30 M
 - Theme 6 - Environment (Including Climate Change) – € 10 M
- **Up to** 100 % of management costs and 50 % of demonstration costs, 75% of RTD costs for SMEs



Biorefinery Joint Call : Overall Aim and Topics

- **Aims at** the research, development and integration of innovative technologies to prove the viability of advanced biorefineries taking into account the entire value chain and sustainability issues
- **Two topics / Two Instruments / Two Budgets**
 - *Collaborative Project (CP) « Sustainable Biorefineries » - € 55 M*
 - *Co-ordination and Support Action (CSA) « Enhancing exchange of information, synergies and cross-fertilization between projects in the field of Biorefineries » - € 2 M*



CP “Sustainable Biorefineries”: Scope

- Sustainable processing of biomass into building blocks for production of bio-based chemicals, materials, second generation biofuels, power and heat
- Address the entire value chain, from production of feedstock to end product
- Integrated multi-disciplinary approach, notably by involving the development of thermo-chemical and biochemical technologies
- Demonstrate performance, sustainability and feasibility at least at pilot scale in an integrated approach
- Demonstrate the part of the biorefinery complex that is closer to the market at industrial pilot plant scale
- Assess for the entire value chain the environmental, economic and social sustainability, including: competition for food and biomass resources, GHG net balance, impact on water and land use, etc.



CP “Sustainable Biorefineries”: Impact and Other Aspects

- Contribute to European competitiveness and wealth by supplying wide range of bio-based products and energy in an economically, socially and environmentally sustainable manner
 - New competences, job opportunities and markets
 - Contribution to EU policy implementation, i.e. Lead Market Initiative, SET Plan, Energy & Climate Package
-
- Relevant industrial participation is essential
 - Funding of a limited number of large, multi-disciplinary collaborative projects meeting the required level of integration, while remaining of a manageable size
 - Specific Guide for Applicants for proposals under this topic
 - Partners will be required to conclude a consortium agreement prior to grant agreement



CP" Sustainable Biorefineries" Evaluation procedure

- **A two-step procedure**
- **Remote evaluation** with consensus session in Brussels
- **Stage 1 proposals Deadline : 2nd December 2008 17:00 pm**
 - Evaluation criteria: S/T Quality & Impact
 - Limited size: 20 pages, A4, 11 points, 15 mm margin
 - Criterion marks from 0 to 5 with the possibility of 0.5 point scores
 - Thresholds: S/T 4/5, Impact 3/5, overall 8/10
 - Evaluation planning: remote December 2008, consensus January 2009
- **Stage 2 proposals Deadline : 5th May 2009 17:00 pm**
 - Evaluation criteria: entire set (S/T Quality, Implementation, Impact)
 - Hearings may be organised
 - Criterion marks from 0 to 5 with the possibility of 0.5 point scores
 - Thresholds: S/T 4/5, Implementation 3/5, Impact 4/5, overall 12/15
 - Evaluation planning : remote May / June 2009, consensus June 2009
 - Evaluation results: by end of July 2009



CSA “Enhancing Exchange of Information, ...”: Scope

- Promote coordination of on-going research at European and national levels across Biotechnology, Energy, Industrial Technologies and Environment on distinctive features of the biorefinery concept
- Overcome fragmentation and develop cross-thematic synergies, identifying gaps and overlaps, defining research priority needs and infrastructure
- Information exchange in any aspect of the entire value chain (the feedstock, conversion processes, end-products), the energy efficiency, the economic, socio-economic and environmental performance, as well as other sustainability issues



CSA “Enhancing exchange of information, ...”: Impact and other aspects

- Identification of most relevant activities and their complementarities / synergies
 - Facilitate and enhance the cooperation between key researchers in academia and industries
-
- Relevant industrial participation is essential
 - Networking and exchange activities with relevant international programmes
 - Up to one project may be funded
 - Specific Guide for Applicants for proposals under this topic
 - Partners will be encourage but not obliged to conclude a consortium agreement



CSA “Enhancing exchange of information, ...”: Evaluation procedure

- **A one-step procedure**
- **Deadline : 2nd December 2008, 17:00 pm**
- **Remote evaluation** with consensus session in Brussels
- **Evaluation criteria:** S/T Quality, Implementation and Impact
- **Criterion marks:** from 0 to 5 with the possibility of 0.5 point scores
- **Thresholds:** S/T 3/5, Implementation 3/5, Impact 3/5, overall 10/15
- **Evaluation planning:** remote December 2008, consensus January 2009
- **Evaluation results:** by March 2009



- **Relevant general documents readily available include:**
 - EC Rules for participation
 - Rules for submission, evaluation, selection, award
 - Standard model grant agreement
 - Guide for beneficiaries
 - Guide to Financial Issues

All documents listed above and additional ones can be found at:

http://cordis.europa.eu/fp7/find-doc_en.html

- **Further call-specific documents :**

These are available on the following site:

<http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7CallsPage>



Submission Deadline

**Call published on 3 September 2008
with
submission deadline
2 December 2008
at 17:00 (Brussels local time)**

**Gateway to information
<http://cordis.europa.eu/en/home.html>**

**Functional mailbox :
RTD-BIOREFINERY-JOINT-CALL@ec.europa.eu**



Other Information Events & Further Information Sources

Info days organised by the Energy Theme
on 24-25 September 2008

http://cordis.europa.eu/fp7/energy/events_en.html

http://ec.europa.eu/research/energy/index_en.htm

Info day and Brokerage Event organised by all
Themes on 16 September 2008

http://cordis.europa.eu/fetch?CALLER=EN_NEWS&ACTION=D&RCN=29699

<http://circa.europa.eu/Public/irc/rtd/susbioref/library>





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Thank you for your attention!

