


**Towards
a low carbon
future**

**EU policy to enhance R&D activities and
coordination in the bio-energy field at
European level**

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Content

- FP6 & FP7 funding in the bio-energy field
- SET-Plan
- Focus on the roadmap of the European Industrial Bio-energy Initiative (EIBI)

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DG RTD and TREN sustained funding in bio-energy

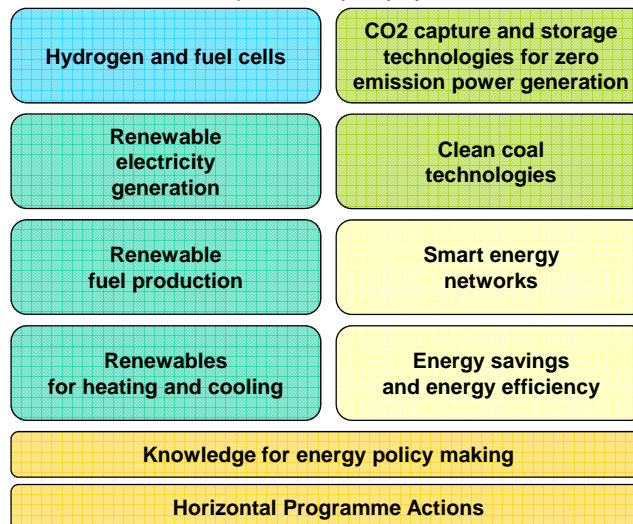
- **FP6**: 34 projects for 165M€
- **FP7**
 - 2007-2008: 25 projects for 75.5 M€
 - 2009 (under negotiation): 10-12 projects for ~83 M€
 - 2010 (under evaluation): 3 topics for ~36 M€
 - Future calls: focus on SET-Plan priorities

(for details on funded projects, see annex1)

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Energy Theme : Overview

Note : 10 "activities" implemented jointly by DG RTD and TREN



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Context of the SET-Plan

- **EU energy and climate change policies**

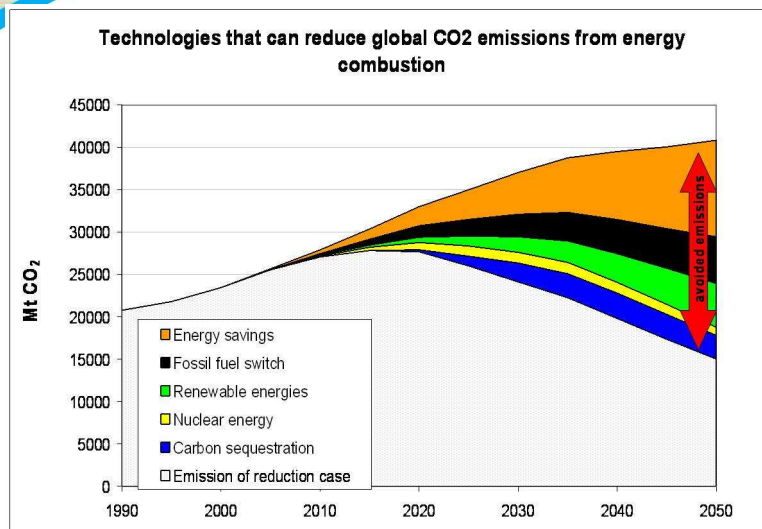
- greenhouse gas emissions
- security of energy supply
- Competitiveness

→ Towards a low carbon economy

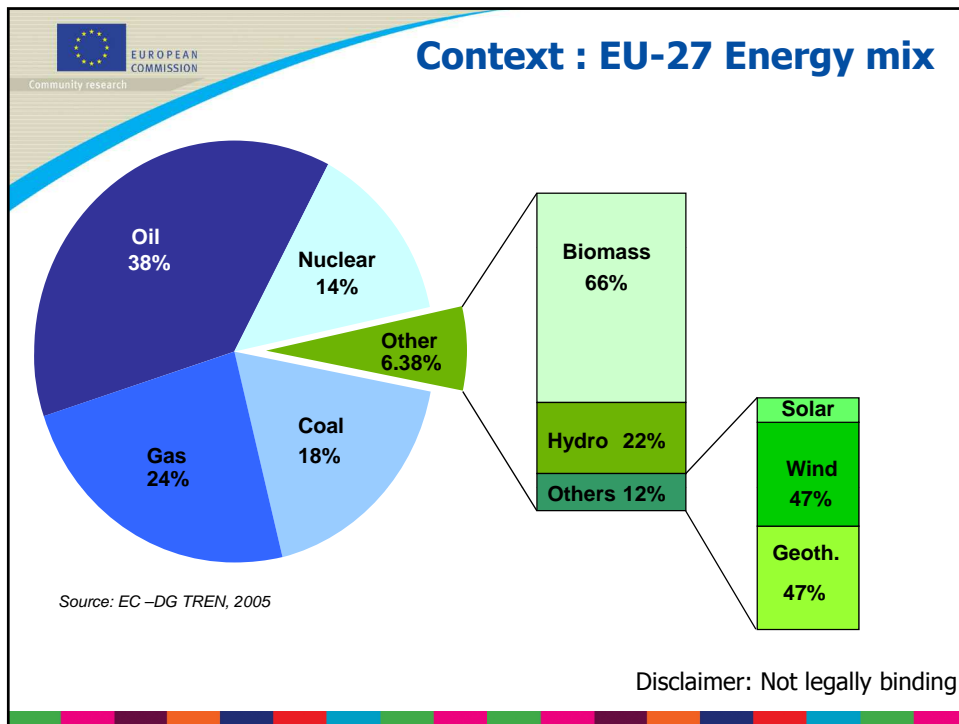
- **The SET-Plan is the TECHNOLOGY PILLAR**

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Context



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- ## The SET-Plan in a nutshell
- **Joint strategic planning and governance**
 - **Effective implementation:**
 - **European Industrial Initiatives – PPP**
 - **European Energy Research Alliance – research joint programming**
 - **Trans-European Energy Networks and Systems of the Future – transition planning**
 - **Reinforce international cooperation**
 - **Increase in resources, both financial and human**
 - **Improve information system (SETIS)**
 - **Annual conferences**
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SET-Plan: state of play

- **Strategic Energy Technology Plan** COM(2007)723 of 22 November 2007
- **Communication on Investing in the development of low Carbon Technologies** COM(2009)519 of 7 October 2009
- **Technology Roadmaps** SEC(2009) 1295 = working document annexed to the communication on investing

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Investment has to increase

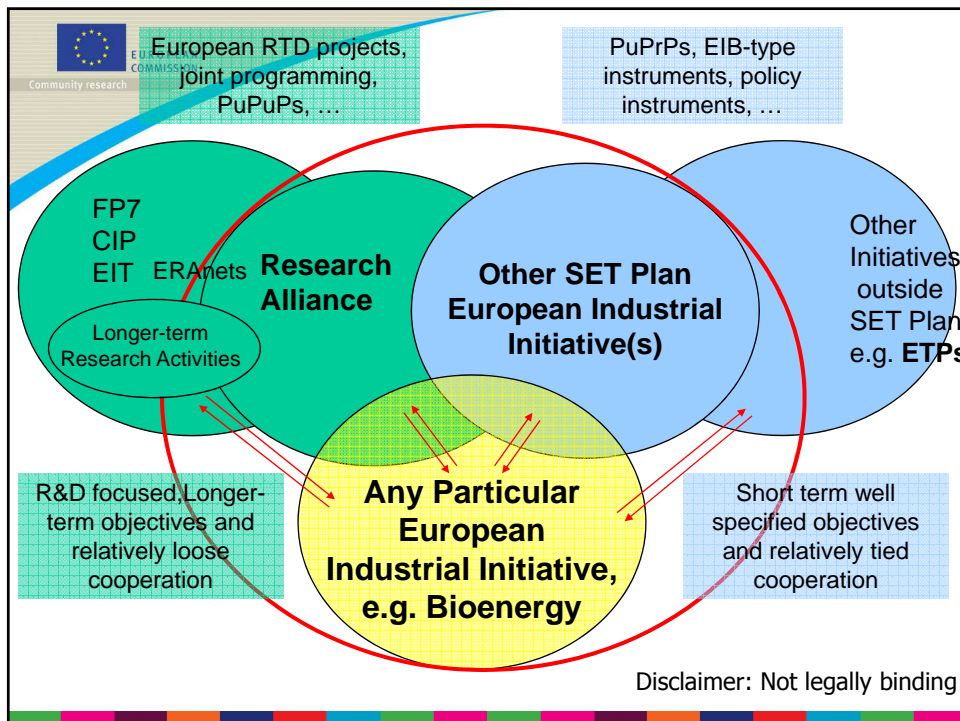
- **Need for an additional investment of 50b€ – public and private – over the next 10 years**
- **Public private partnership (PPP) is the most credible way forward**
- **Public side has to offer appropriate incentives and consistent policy signals**
- **Private side has to grasp the opportunity – world leadership can change quickly**
- **Short-term rise in public share could pay dividends – lower future spending**

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Possible sources of public funding

- **EU Emissions Trading System (ETS) – potential virtuous cycle of reinvesting auction revenues**
- **300m EU Allowances from the New Entrants Reserve for demonstration projects (CCS and RES)**
- **EU programmes:**
 - Grants: e.g. FP7/EIT/CIP/ERA-NET+
 - “Big money”: e.g. EIB, RSFF
- **But, current resources are not on the scale needed**

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BIO-ENERGY TECHNOLOGY ROADMAP

- **Bioenergy = biofuels (gas, liquids), heat and power from biomass**
- **Strategic objective:**
Accelerate commercial deployment of bio-energy conversion technologies for sustainable exploitation of biomass resources.
- **Industrial sector objective:**
 1. **14% of total consumed energy by 2020,**
 2. **60% GHG emission savings**
 3. **Compliance to sustainability criteria of the new RES directive.**

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BIO-ENERGY ROADMAP: Activities & estimated funding needs

Actions	Cost M€
1. Optimisation of the most promising value chains (<i>see annex 2 for details</i>) => collaborative programme of demonstration and first-of-this-kind industrial-size plants	7900
2. Support activities on biomass feedstock assessment, production, management and harvesting for energy purposes	600
3. Identification and development of new value chains (longer term R&D)	400
TOTAL	9000

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Commission calls for:

- **An increase in investment – public and private – for the development of low carbon technologies**
- **Support for the Technology Roadmaps as the basis for launching the Industrial Initiatives**
- **Focus EU programmes and joint programming on the SET-Plan initiatives,**
- **Reinforce the financial instruments involving EIB**
- **A new look at financial engineering for large projects and early market replication**
- **Strengthened international cooperation**

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THANK YOU FOR YOUR
ATTENTION!

Annex1:

Projects funded under FP6/FP7 in bio-energy

FP6: 34 projects for 165M€. The focus of the activities was on:

- Energy from crops (2 projects)
- Biofuels (10 projects on first and second generations)
- Gasification technology improvement (2 projects)
- Hydrogen production (2 projects)
- Biorefineries (2 projects)
- Demonstration on CHP, combustion and co-firing (8 projects)
- Demonstration on biowaste (3 projects)
- Co-ordination activities (1 NoE, 1 STREP, 1 CA)+ 1 ERA-NET

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Annex1:

FP7 projects

2007-2008: 25 projects for 75.5 M€ covering gasification technologies, biorefineries, 2nd generation biofuels and Hydrogen production. 3 SICAs with Latin American countries and one coordinated projects on co-firing with Russia.

2009:

General call RTD: 3 projects in negotiation – 1 CA on aquatic biomass, 2 CP on conversion of biowaste to biofuels.

Biorefinery call: 1 CA to be signed, 3 CP under negotiation for a total of 52 M€.

Call TREN: biomass to electricity from energy crops and recovered fuels – results non known yet.

Call Brazil: 2nd generation biofuels - ongoing evaluation.

2010:

General call RTD: a topic on sun-to-fuel, evaluation of stage 1 ongoing.

Call TREN: 1 demonstration topic on algae to biofuels & 1 demonstration of a new generation of boiler and stove

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Annex 2: Identified VALUE CHAINS

Thermochemical pathways from ligno-cellulosic feedstock

- A:** Liquid fuels (e.g. gasoline, naphtha, kerosene or diesel fuel) and chemicals through gasification.
- B:** Bio-synthetic natural gas or methane through gasification.
- C:** Heat and electrical power through gasification
- D:** Intermediate bioenergy carriers through pyrolysis and torrefaction
- E:** Co-processing biomass and/or bio-energy carriers with petroleum oil

Biochemical pathways

- A:** Ethanol, higher alcohols and valuable co-products from ligno-cellulosic feedstock through chemical and biological processes
- B:** Hydrocarbons (e.g. diesel and jet fuel) through biological and/or chemical synthesis from biomass containing carbohydrates
- C:** Transportation fuels (e.g. biodiesel and aviation fuels) and valuable bio-products from bioenergy carriers produced by micro-organisms (algae, bacteria)

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