



Opportunities for bio-fuels in European Union

Biomass 2010



EUROPEAN
COMMISSION

Disclaimer: Not legally binding

Philippe Schild , DG Research
European Commission

- European Union Policy Context
- Renewable Directive
- 7th EU Research Framework Programme (FP7)
- Strategy Energy Technology Plan
- European Industrial Bio-energy Initiative



● Energy & Research Policy Contexts

● Energy Policy – 2009 Legislation

- Renewable Directive – Revision ←
- Fuel Quality Directive – Revision

● Environmental Policy – 2008 Legislation

- Emission Trading Scheme – Revision

● Research ←

- 2007-2013 R&D&D Framework Programme
- Strategic Energy Technology Plan - 2007



● Renewable Directive (2009/28/EC)

- » 20% Share of total EU Energy consumption
 - 10% RES share in energy consumed in transport
 - For bio-fuels and bio-liquids
 - Greenhouse emission saving at least 35%
 - Sustainability criteria
- » 20% Energy Efficiency improvement
- » 20-30% Reduction of GHG

FP7 – 2007-2013

Energy Theme, 2300 M€

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



EUROPEAN
COMMISSION

Disclaimer: Not legally binding

● Projects 2007-2009

Areas (number of projects)

Gasification (3) → gas cleaning for FT

Biorefinery (6) → new concepts and integration issues

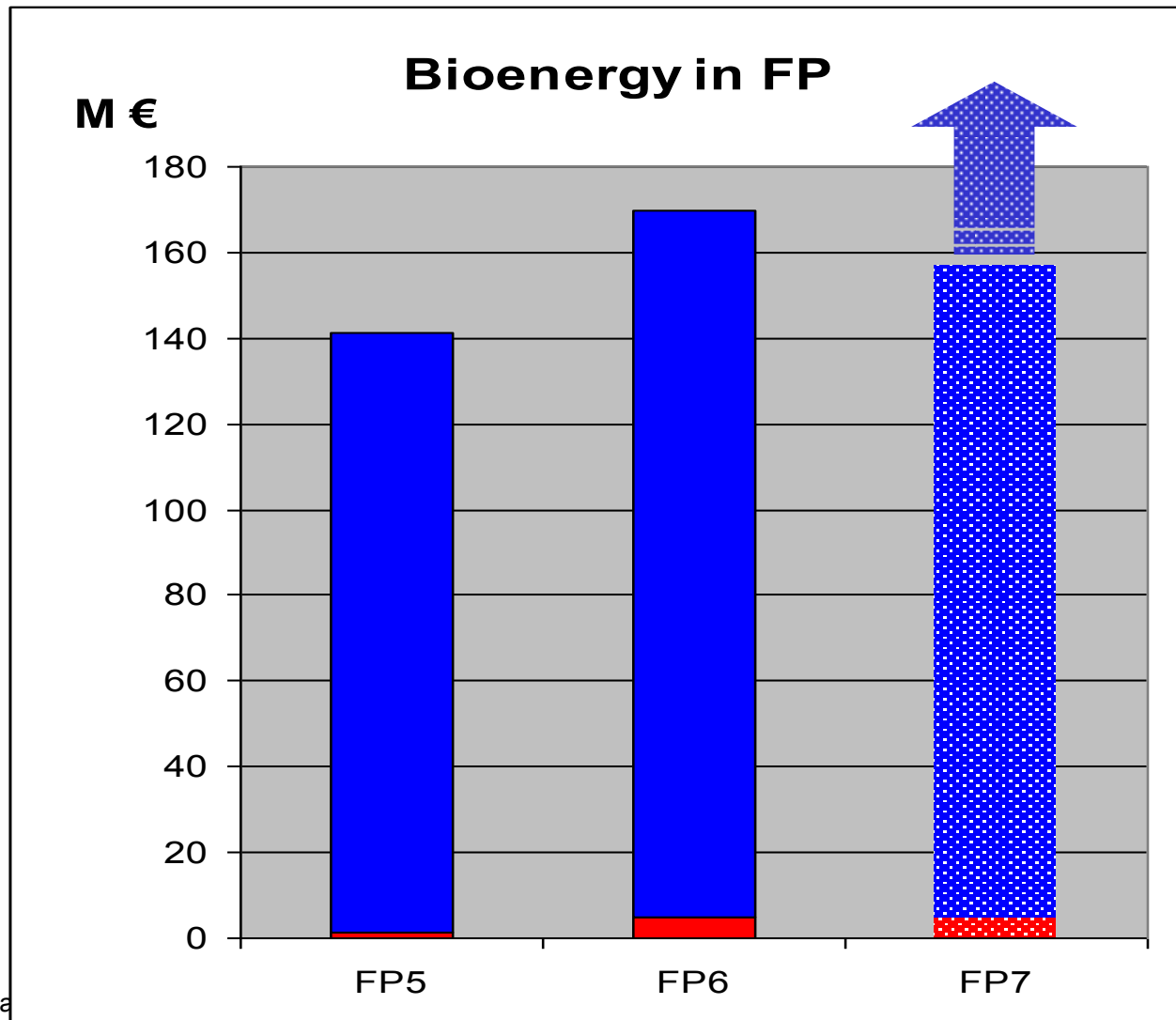
Biofuels (17) → demonstrations of 2nd generation

Power (2) → CHP

Other (7) → Algae, “solar fuels”



Summary FP investments in Bioenergy



● Bio-refinery – 2009 Call

- Multidisciplinary R&D
- Value chain approach: field to product
- Life cycle and sustainability approach
- Demonstration at pilot scale of conversion streams

→ 3 projects selected for 80M€ (52M€ - EC, 28M€ private), 4 years, 81 partners

→ BIOCORE, EUROBIOREF, SUPRABIOREF

→ Start dates: 01/03/2010



● 2010 Call

- Topic: Sun to Fuel
 - Conversion at the molecular level
- Topic: Demonstration projects of 2nd generation bio-fuels from algae

➔ **Evaluation of proposals in progress**

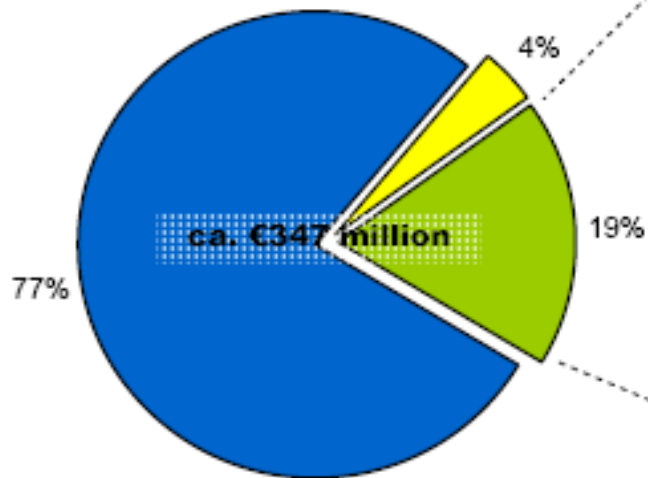
➔ **Selection in June 2010**



R&D investment

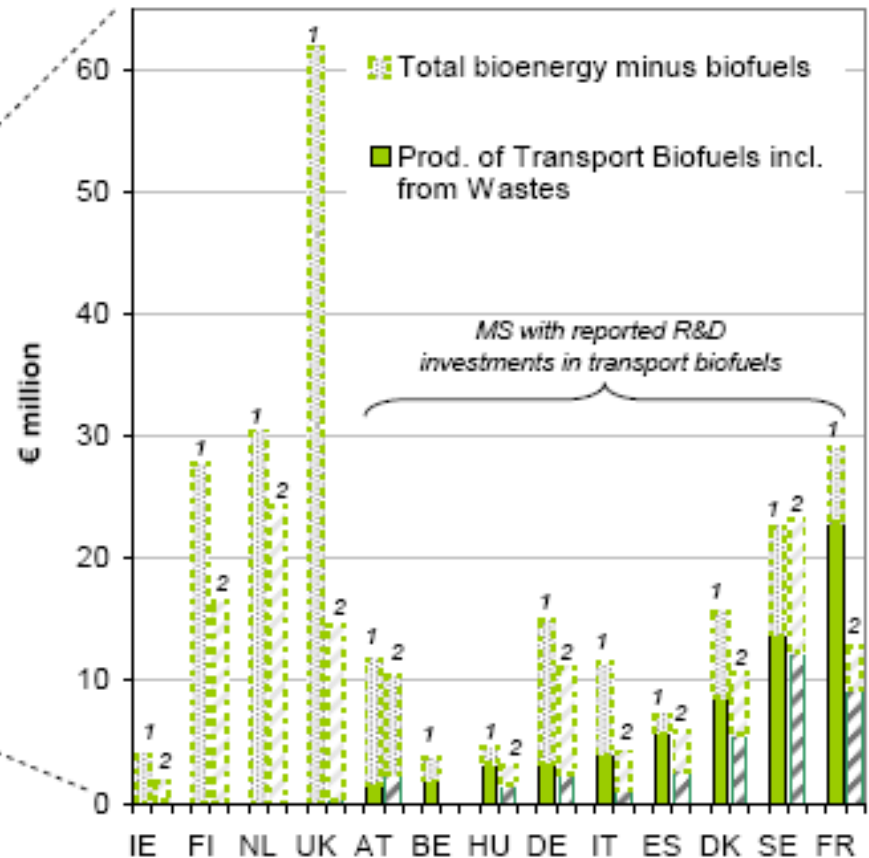
● in transport biofuels from industry and public sectors

- Public EU (FP6, annual average)
- Public R&D spending of EU MS (2007)
- Corporate R&D investment (2007)



1- 2007 data (gap-filled)

2- Annual average over the period 2002-2007



● European Strategic Technology Plan (SET-plan) [COM(2007)723]

- Joint Strategic Planning with MS (Steering Group)
- Implementation:
 - » **European Industrial Initiatives**
 - » **European Energy Research Alliance**
 - » **Trans-European Energy Networks and Systems of the Future**
 - » **SETIS (www.setis.ec.europa.eu)**
- Increase resources, both financial and human.
- Reinforce international cooperation



● SET-plan : European Industrial Bioenergy Initiative – 7 value chains

Generic value-chains	Maturity in Europe
Thermochemical pathways	
A: Synthetic fuels and/or hydrocarbons (e.g. gasoline, naphtha, kerosene or diesel fuel) through gasification.	Pilot & demo
B: Bio-methane and other bio-synthetic gaseous fuels through gasification.	Pilot & demo
C: High efficiency heat & power generation through gasification	Demo
D: Intermediate bio-energy carriers through techniques such as pyrolysis and torrefaction	Pilot & demo
Biochemical pathways	
A: Ethanol and higher alcohols from ligno-cellulosic feedstock through chemical and biological processes	Pilot & demo
B: Hydrocarbons (e.g. diesel and jet fuel) through biological and/or chemical synthesis from biomass containing carbohydrates	Lab/Pilot
C: Bio-energy carriers produced by micro-organisms (algae, bacteria) from CO ₂ and sunlight	Lab/Pilot

● SET-Plan : European Industrial Bioenergy Initiative (EIBI)

➔ Where are we?

- ➔ Industrial Proposal presented on 26 June 2009
- ➔ Workshop on eligibility and selection criteria on 29 September 2009
- ➔ Definition of a roadmap in October 2009
- ➔ Proposal for an Implementation Plan (2010-2012) & governance under development with industry, MS and EC

➔ Possibility of launching it by end of 2010



● SET-plan : European Industrial Bioenergy Initiative – Activities

Core activities (industry)

- Demonstration plants of innovative technologies
- Reference plants – first of the kind commercial plants

Complementary measures (research)

- Biomass feedstock for bio-energy
- Longer term R&D on innovative and emerging value chains



Towards
a low carbon
future

Thank you for your attention!



EUROPEAN
COMMISSION