


## EU Bio-energy Research Context and Strategy

Silvia Ferratini  
DG RTD, European Commission



Disclaimer: Not legally binding

1

## EU Bio-energy Research Context and Strategy

- **Renewable Energies Framework**
- **The European Industrial Bioenergy Initiative of the SET-plan**
- **Bioenergy in the Framework Programme(s)**
- **300 million allowances in the New Entrants' Reserve of the European Emissions Trading Scheme (NER 300)**
- **Opportunities for international collaboration**



Disclaimer: Not legally binding

2

## Renewable Energies framework

- **Renewable Directive (2009/28/EC)**

- 20% Share of total EU Energy consumption
  - 10% RES share in energy consumed in transport
- 20% Energy Efficiency improvement
- 20-30% Reduction of GHG
  - National Action Plans for June 2010

- **A European Strategic Energy technology Plan (SET-Plan) COM (2007)723**

- **EC Communication of on investing in the development of low carbon technologies – COM(2009)519**



3

Disclaimer: Not legally binding

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

- **Joint Strategic Planning – new governance – align technology development with energy policy goals**
- **Effective implementation:**
  - » **European Industrial Initiatives: strategic technology alliances**
  - » **European Energy Research Alliance: strengthening European energy research capacities**
  - » **Trans-European Energy Networks and Systems of the Future: transition planning**
- **Increase resources, both financial and human**
- **Reinforce international cooperation**

Disclaimer: Not legally binding

COMMISSION

## International Cooperation

- **EU – US Energy Council**

- » *To increase collaboration with a view possible joint activities.*

- » **3 working groups**

- **On Policy**
    - **On R&D Development**
      - **8 sub-groups including bio-energy**
    - **On cooperation towards 3<sup>rd</sup> countries**



5

Disclaimer: Not legally binding

## SET-plan : SETIS – Information system

- **The SETIS is the online SET Plan Information System,**

launched by the Commission on 7 October 2009

[www.setis.ec.europa.eu](http://www.setis.ec.europa.eu)

- **The SETIS enables the monitoring of the SET Plan actions, the assessment of its impact on policy and the identification of corrective measures if needed**

- **The Capacity Map:** monitor R&D effort made by the industry and the public sector in EU on key low carbon technologies

- **The Technology Map:** gather key information on the status and prospects of low carbon technologies



6

Disclaimer: Not legally binding

## SET-plan : European Industrial Initiatives

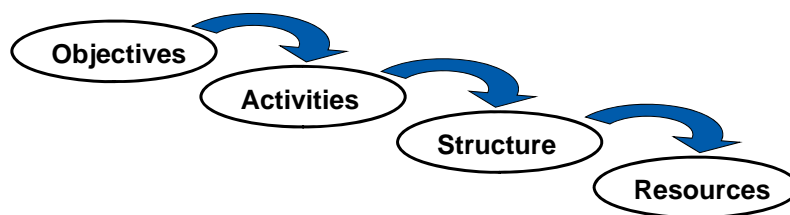
- **European Wind Initiative**
- **Solar Europe Initiative**
- **Bio-energy Europe Initiative**
- **European Electricity Grid Initiative**
- **European CO2 capture, transport and storage initiative**
- **Sustainable fission initiative (Gen IV)**



7

Disclaimer: Not legally binding

## European Industrial Initiatives Workflow



**We should first decide on the objectives!**

**Structure & finances will be decided later based on the objectives and activities  
No single, pre-determined model and structure of implementation!!!**

***Timeline for setting up the initiative: 1 – 3 years***



8

Disclaimer: Not legally binding

## SET-plan : European Industrial Initiatives

### Where are we?

- **Communication on Investing in the development of Low Carbon Technologies COM (2009)519 (Oct 2009)**
- **Indicative Roadmap developed by EC and industry stakeholders (July-Oct 2009) in the accompany doc to COM (2009)519**
- **Discussion of Technology Roadmaps at SET Plan Conference (Oct 2009)**
- **Development of Implementation Plans 2010-2012 (ongoing)**
- **Definition of model and structure of implementation - no single, pre-determined model and structure of implementation (ongoing)**
- **Decision on MS participation and modalities: joint programming (ongoing)**



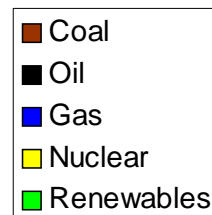
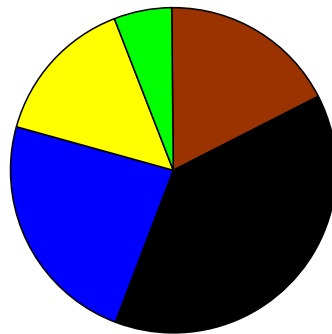
**Plan to launch in 2010**



9

Disclaimer: Not legally binding

## Context : EU-27 Energy mix (~1800 Mtoe)



Oil: 38%

Gas: 24%

RES: 6% (60% biomass, 30% hydro, 10% new RES)

Coal: 18%

Nuclear: 14%

Source: European Commission DG TREN, Eurostat



10

Disclaimer: Not legally binding

## European Industrial Bioenergy Initiative Objectives

### To meet EU 2020 Energy and climate targets

- Bioenergy up to 14 % of the EU energy mix and up to 10 % of energy demand in transport

### Objectives

- ✓ Boost of the contribution of sustainable bio-energy leveraging on public private partnership to manage the risks and share the financing
- ✓ Commercial availability of advanced bio-energy at large scale by 2020 competitive with fossil fuels
- ✓ Commercial availability of advanced bio-fuels covering up to 4 % of EU transportation energy needs by 2020
- ✓ Strengthening of EU world technology leadership for renewable transport fuels for diesel and jet engines



11

Disclaimer: Not legally binding

## European Industrial Bioenergy Initiative Activities

### Core activities

- Bring to commercial maturity by 2020 **innovative bioenergy value chains** with large market potential, based on significantly different feedstock and technological options (demo and reference plants)
- Led and implemented by **industrial actors**

### Complementary measures and activities

- Set of initiatives on **biomass feedstock for bio-energy**
- **Longer term R&D&D** on emerging and innovative bio-energy value chains
- Not implemented directly by EIBI Industry stakeholders




12

Disclaimer: Not legally binding

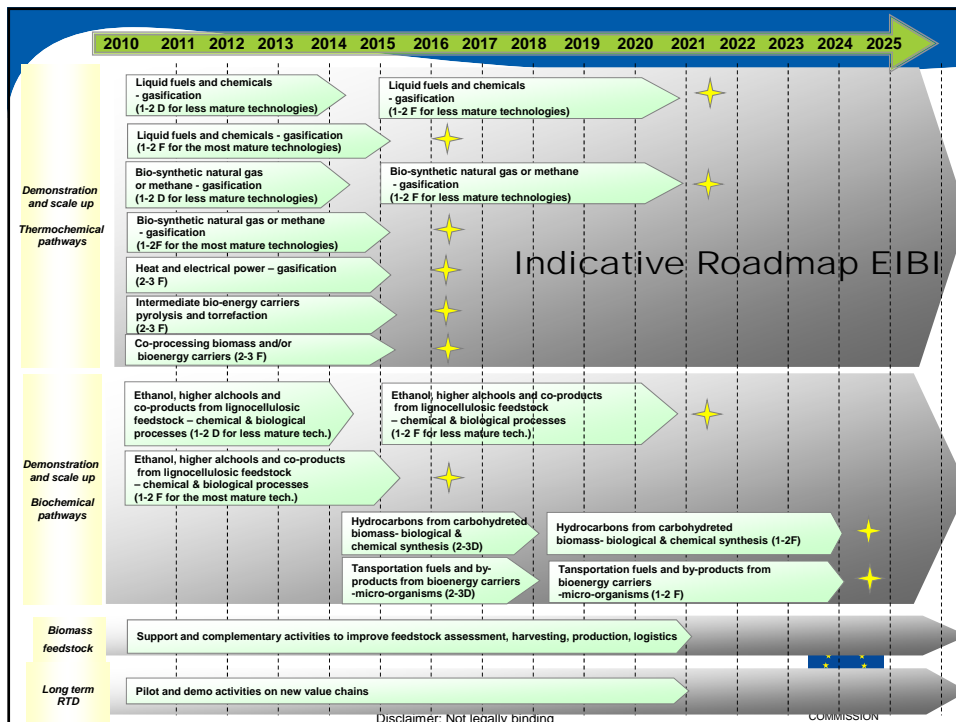
## European Industrial Bioenergy Initiative 7 value chains

Thermochemical pathways	Maturity in Europe
<b>A: Synthetic liquid fuels</b> and/or <b>hydrocarbons</b> (e.g. gasoline, naphtha, kerosene or diesel fuel) through gasification	Pilot & demo
<b>B: Bio-methane</b> and other bio-synthetic <b>gaseous fuels</b> through gasification	Pilot & demo
<b>C: High efficiency heat &amp; power</b> generation through gasification	Demo
<b>D: Intermediate bio-energy carriers</b> through techniques such as pyrolysis and torrefaction	Pilot & demo
Biochemical pathways	
<b>A: Ethanol</b> and <b>higher alcohols</b> from ligno-cellulosic feedstock through chemical and biological processes	Pilot & demo
<b>B: Hydrocarbons</b> (e.g. diesel and jet fuel) through biological and/or chemical synthesis from biomass containing carbohydrates	Lab/Pilot
<b>C: Bio-energy carriers</b> produced by micro-organisms (algae, bacteria) from CO2 and sunlight	Lab/Pilot



13  
EUROPEAN COMMISSION

Disclaimer: Not legally binding



## European Industrial Bioenergy Initiative Next steps

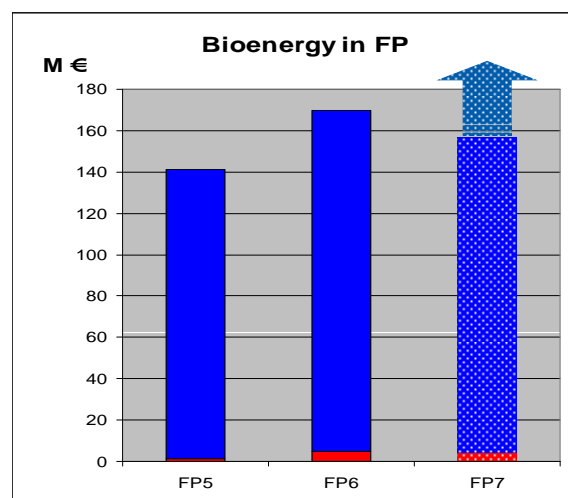
- Finalization of Implementation Plan (2010-2012)
- Definition of governance structure and funding mechanisms
- Launch of the Initiative
- Definition of calls modalities
- Definition of eligibility and selection criteria (first workshop in Sept 2009)



15

Disclaimer: Not legally binding

## Summary FP investments in Bioenergy



**First three calls FP7  
2007/2008/2009:**

Around **152,5 M€**  
spent in calls for  
biomass related RTD  
and demo activities in  
the areas of:

- Gasification (3)
- Biorefinery (6)
- Biofuels (17)
- Power (2)
- Other (7)



16

Disclaimer: Not legally binding

## Bioenergy in FP7 – on going

- **Topic on Demonstration of Algae to 2<sup>nd</sup> Generation bio-fuels (FP7-ENERGY-2010-2)**
  - » Deadline 04/03/2010
- **Topic on R&D Fuel via photosynthesis (longer term research) (FP7-ENERGY-2010-1)**
  - » Stage 2 deadline 11/03/2010
  - » Negotiation to start in June 2010
- **Energy Second Generation Biofuels - EU Brazil Coordinated Call (FP7-ENERGY-2009-BRAZIL)**
  - » Negotiation to start in March 2010

➔ **Launch of 2011 calls planned in July 2010**



17

Disclaimer: Not legally binding

## New Entrants' Reserve 300 – Financing Opportunities

**NER300 Draft Commission Decision approved by MS on 02/02/2010**

- ➔ Annex I describing technology categories
  - 34 innovative RES categories and sub-categories
    - 9 for bio-energy focused
      - 2<sup>nd</sup> and advanced biofuels (liquid & gaseous)
      - Intermediate bio-energy carriers
    - 8 for CCS
- ➔ Rules for submission and selection



18

Disclaimer: Not legally binding

## New Entrants' Reserve 300 – Financing Opportunities

### Timeline

- Information campaign in June 2010
  - Synergy with SET-Plan to be initiated with MS
- Publication of call by DG ENV in July 2010
- Submission deadline to MS by applicants on 31/10/2010
- Submission deadline to EC & EIB by MS on 31/12/2010 for evaluation
  
- **Selection in 2011**
- **Second call in 2012-13**



19

Disclaimer: Not legally binding

A graphic with a blue sky background and wind turbines. A large yellow circle with a grid pattern contains the text "Towards a low carbon future".

Towards  
a low carbon  
future

Thank you for your attention!

The logo of the European Commission, featuring the European Union flag (a circle of twelve gold stars on a blue background) above the text "EUROPEAN COMMISSION".

Disclaimer: Not legally binding

EUROPEAN  
COMMISSION