

## The European Industrial Bioenergy Initiative (EIBI)

### Recent and future developments



European Commission  
Research & Innovation  
Cooperation | Energy  
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1

## Context

- **RES Directive (2009/28/EC) → 2020 mandatory targets:**
  - 20% reduction in emissions
  - 20% improvement in energy efficiency
  - 20% renewable energies
    - 10% renewable in transport
- **G8 in Aquila → 2050 target: developed countries should cut their GHG emissions by 80% by 2050**
- **EU 80% dependent on fossil fuels**
- **A critical challenge: from 80% dependency on fossil fuels to 80% reduction in GHG emissions in 40 years**
  - Technology is essential for this transition!

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2

## EU's response : the SET Plan

- **The Strategic Energy Technology (SET) Plan\* is the technology pillar of the EU's energy and climate change policy**
  - Objective is to accelerate the development of low carbon technologies leading to their market take-up
  - Vision of a Europe with world leadership in a diverse portfolio of clean, efficient and low carbon technology – as a motor for growth and jobs
  - A firm commitment to position the European industry in a leading role worldwide while contributing to the transition to a low-carbon economy

\* COM (2007)723 of 22 November 2007

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3

## SET-Plan Architecture

- **Three Main Pillars:**
  - European Industrial Initiatives
  - European Energy Research Alliance
  - Transition planning (trans-European energy networks, legislation, regulation)

*Principle: creating synergies and economies of scale, sharing risks (PPPs)*

- **Education and training**
- **International Cooperation**

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4

## EIIs in brief

- **Public – private partnerships in sectors where barriers can best be tackled collectively**
- **Risk sharing, pooling resources, co-ordinated work**
- **Generate the critical mass to accelerate technology development and deployment**
- **Demonstration activities + support actions.**
- **Variable geometry and different instruments**

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5

## European Industrial Bioenergy Initiative (EIBI)

- **Objective: commercial availability of advanced bioenergy by 2020**
  - Focus on advanced biofuels
  - Up to 4% of EU transportation energy needs by 2020.
  - Strengthening EU technology leadership
- **Core activities: industrial projects of European relevance, with a potential for large scale deployment - 7 generic, innovative value chains**



**DEMONSTRATION**  
Last pre-commercial step



**"FLAGSHIP"**  
First commercial units

- **Complementary measures:**
  - Biomass feedstock
  - Longer-term R&D

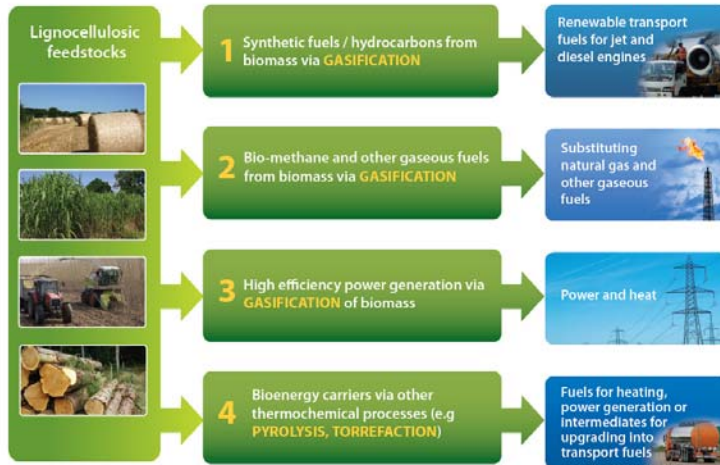


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6

## Advanced value chains based on thermochemical processes

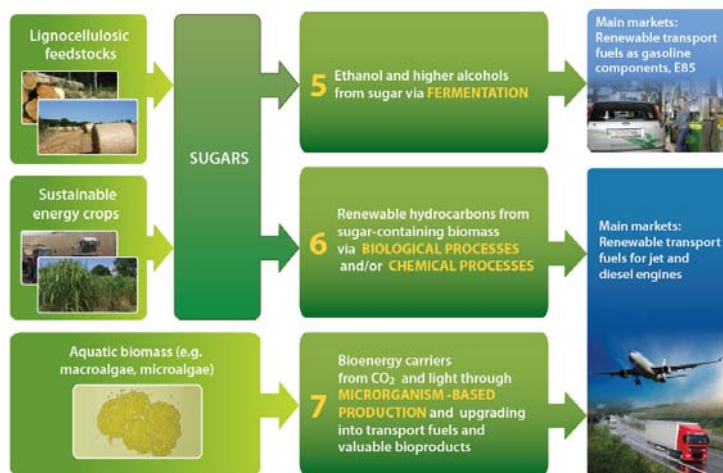


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7

## Advanced value chains based on biological and chemical processes



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8

Value chain	Description	Public Funding	Indicative Cost per Project (M€)
<b>DEMO PLANTS</b>		<b>50%</b>	<b>145 - 320</b>
1	Synthetic liquid fuels and/or hydrocarbons (e.g. gasoline, naphtha, kerosene or diesel fuel) and blending components through gasification.	Grant + Public Loan	40-100
2	Bio-methane and other bio-synthetic gaseous fuels through gasification.		20-40
3	High efficiency heat & power generation through thermochemical conversion (propose limit e.g.: $\eta_{th} > 45\%$ )		20-40
4	Intermediate bioenergy carriers through techniques such as pyrolysis and torrefaction		20-40
5	Ethanol and higher alcohols from ligno-cellulosic feedstock through chemical and biological processes		20-40
6	Hydrocarbons (e.g. diesel and jet fuel) through biological and/or chemical synthesis from biomass containing carbohydrates		5-20
7	Bioenergy carriers produced by micro-organisms (algae, bacteria) from CO <sub>2</sub> and sunlight		20-40
<b>FLAGSHIP PLANTS</b>		<b>50%</b>	<b>1050 - 2250</b>
1	Synthetic liquid fuels and/or hydrocarbons (e.g. gasoline, naphtha, kerosene or diesel fuel) and blending components through gasification.	Public Loan + Public Guarantee of Private Loan	400-1000
2	Bio-methane and other bio-synthetic gaseous fuels through gasification.		200-300
3	High efficiency heat & power generation through thermochemical conversion (propose limit e.g.: $\eta_{th} > 45\%$ )		150-250
4	Intermediate bioenergy carriers through techniques such as pyrolysis and torrefaction		50-100
5	Ethanol and higher alcohols from ligno-cellulosic feedstock through chemical and biological processes		100-200
6	Hydrocarbons (e.g. diesel and jet fuel) through biological and/or chemical synthesis from biomass containing carbohydrates		50-100
7	Bioenergy carriers produced by micro-organisms (algae, bacteria) from CO <sub>2</sub> and sunlight		100-300
<b>COMPLEMENTARY MEASURES</b>		<b>50-75%</b>	<b>135 / year</b>
	Biomass feedstock for bioenergy	Grant	5-15
	Set of activities on longer term R&D on emerging and innovative bioenergy value chains	Grant	5-15

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## Implementation modalities

### CORE ACTIVITIES

«Call for Expression of Interest» - Jul - Oct 2011



Industrial readiness / « maturity » per value chain



SETIS

Implementation and project selection procedures - 2013 +



DEMONSTRATION

(e.g. through ERA NET Plus)



FLAGSHIP

Eligibility and Selection Criteria

On-going discussion on SET-Plan Financing Instruments and Implementation Modalities

### COMPLEMENTARY ACTIVITIES

Workshops in 2012 to identify priorities



Calls (FP7 and other) in 2013+

Interaction with other ETPs, EERA, other stakeholder groups and EU programmes

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## Main Eligibility and Selection Criteria for Core Activity Projects

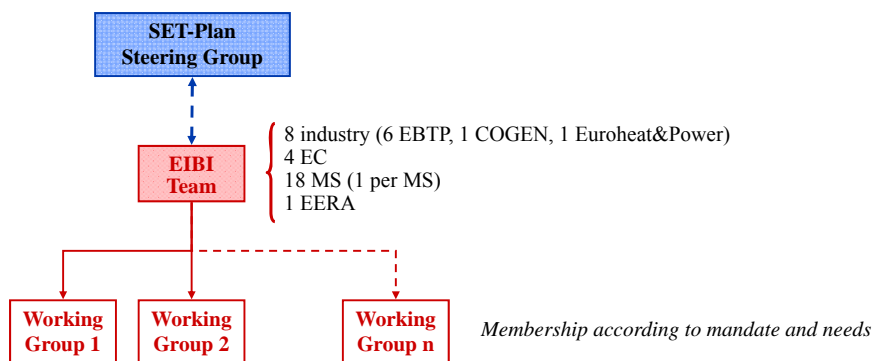
- EU dimension (beyond the capacity of a single enterprise/country)
- Sustainability (social, economic and environmental)
- Industrial leadership and innovation
- Feedstock availability
- Market potential
- Level of maturity

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11

## EIBI Structure and members




**Extended meetings** organised once a year, involving a variety of stakeholders (NGOs, sectorial associations, Technology PLatforms, etc.)

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12

## Chronology

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- 2007**
    - Preliminary discussions between industrial stakeholders and EC
  - 2008**
    - October: EC meeting with biofuel and other bioenergy stakeholders on EIBI
  - 2009**
    - March: EBTP's first document on EIBI presented to EC
    - October: Roadmap presented to stakeholders and MS at Stockholm Conference
  - 2010**
    - February: EBTP's first version of Implementation Plan presented to EC
    - June – October: working groups and first meetings of EIBI Team
    - November: EIBI launched at the Belgian Presidency Conference
  - 2011**
    - July: Publication of Call for Expression of Interest
    - July: Publication of ERA-NET + Bioenergy Call
    - October: Closure of Call for Expression of Interest

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13

## Next steps

- **2012**
  - February 2012: closure ERA-NET+
  - March / April 2012: EIBI extended meeting
  - End 2012: Publication of the ERA-NET+ joint call for demonstration projects
- **2013**
  - Launch of ERA-NET+ demonstration projects
- **2014**
  - Horizon 2020 in force: new instruments available for « flagship » projects

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14

## Horizon 2020 and EIBI

- **Horizon 2020: EC proposal for a 80 billion euro R&I funding programme (2014-20)**
- **Integration of existing programmes to cover the full innovation cycle**
- **3 priorities: excellent science, industrial leadership and societal challenges**
  - Access to risk finance: 4 B €
  - Challenge *Secure, clean and efficient energy*: 6.5 B € (nuclear not included) → Support to SET-Plan specifically sought

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15

*Thank you for your attention*

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16