

# ***Boosting the contribution of bioenergy to the EU Climate & Energy ambitions***

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## ***The European Industrial Bioenergy Initiative***

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## 1. Introduction & background

- The European Biofuels Technology Platform
- EU 2020 Climate & Energy targets: *challenges for bioenergy*
- SET Plan & Industrial Initiatives

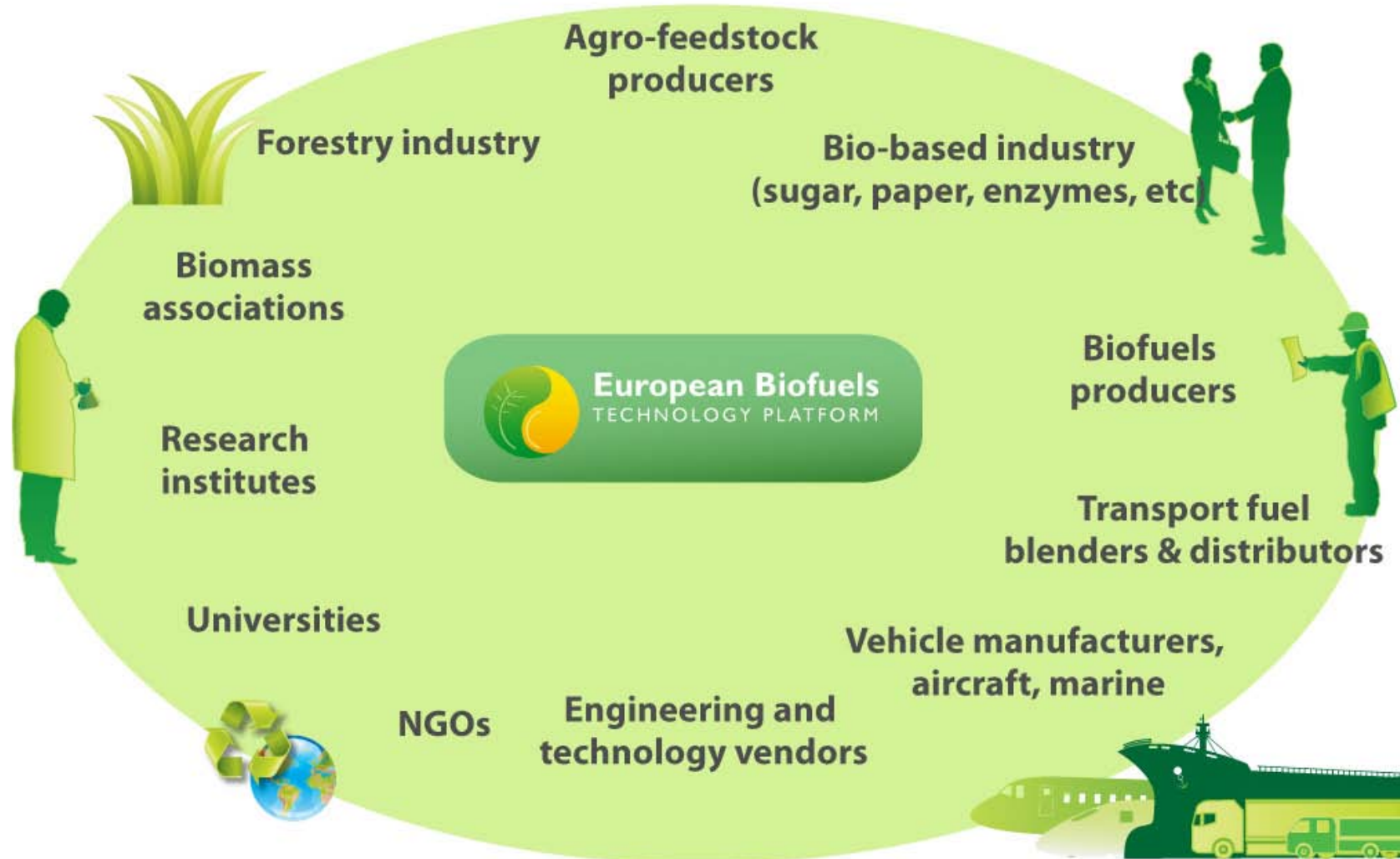
## 2. European Industrial Bioenergy Initiative

- Objectives
- Scope
- Activities

## 3. Summary & next steps

# 1. Introduction & background

## About EBTP



# 1. Introduction & background

## EU 2020 Climate & Energy targets: challenges for bioenergy

- Bioenergy contribution to 2020 targets could request up to 3 fold increase in total biomass use and a factor 10 for biofuels, creating a double challenge for bioresources:
  - ⇒ *quantitative: more bioresources are needed*
  - ⇒ *qualitative: more valuable final energy and added value out of each ton of feedstock and/or hectare of land*
  
- Current feedstock and technologies will bring a significant contribution but are unlikely to meet these targets. Innovation is needed :
  - ⇒ *to enlarge the feedstock base,*
  - ⇒ *to process new and most often more difficult feedstocks*
  - ⇒ *to enhance energy and economic content of the end products per unit of feedstock and/or land used*

# 1. Introduction & background

## Current and advanced bioenergy value chains: multiple options

### Feedstocks

#### Multi purpose crops

Sugar crops  
Oil crops  
Starch crops

#### Lignocellulosic energy crops

Energy grass  
SRC

#### Residues / wastes

Forestry residues  
Agricultural residues  
Biowaste streams  
(household/industry)

#### Aquatic biomass

Microalgae  
Macroalgae  
Halophytes

### Conversion processes

#### Thermochemical conversion

Pretreatment/fractionation  
Torrefaction  
Pyrolysis  
Gasification / Syngas cleanup  
Fuel synthesis

#### Biological/chemical conversion

Pretreatment/fractionation  
Hydrolysis  
Fermentation  
Upgrading  
Reforming  
Refining  
Catalysis  
Metabolic engineering

### End use

#### Biofuels

##### Liquid

Fatty Acid Methyl Ester (FAME)  
Ethanol  
Methanol  
Butanol  
Alkanes/hydrocarbons  
Hydrogenated Vegetable Oils  
Biomass to Liquid (BtL)  
Jet Fuel

##### Gaseous

Methane/  
Synthetic Natural Gas (SNG)  
Dimethylether  
Hydrogen

#### Heat

#### Electricity

# 1. Introduction & background

## EU 2020 Climate & Energy targets: challenges for bioenergy

- Enlarging the feedstock basis on a sustainable basis
- Developing technologies to process the new feedstock and/or increase value out of existing feedstocks.
- Selecting relevant technologies among many different options
- Securing funding to deploy at industrial scale the options with large market potential, to allow them to be subsequently duplicated as „bankable projects“
  - crossing the „Valley of Death“ of industrial innovation for complex processes
  - No existing tool/program exist yet to tackle this considerable challenge

## SET Plan & European Industrial Initiatives (EII)

The European Industrial Bioenergy Initiative (EIBI) will focus on ***advanced biofuels*** in the context of an ***overall strategy for bio-energy***

- **Scope:** **bio-energies and bio-energy carriers** (solid, liquid, gaseous fuels, heat, electricity) includes ***biorefining/industrial integration***.
- **Goal:** to accelerate the commercial deployment of advanced technologies to boost the contribution of sustainable bioenergy to the EU 2020 targets.
- **Key features:**
  - Industry lead
  - Share risk & financing through public-private partnership
  - Leverage on European scale capability and added value to overcome national limitations
  - Sustainability essential in its three dimensions (economic, environmental, social)

→ **EIBI: the right tool at the right time ....**

## 2. European Industrial Bioenergy Initiative

## 2. EIBI: Objectives

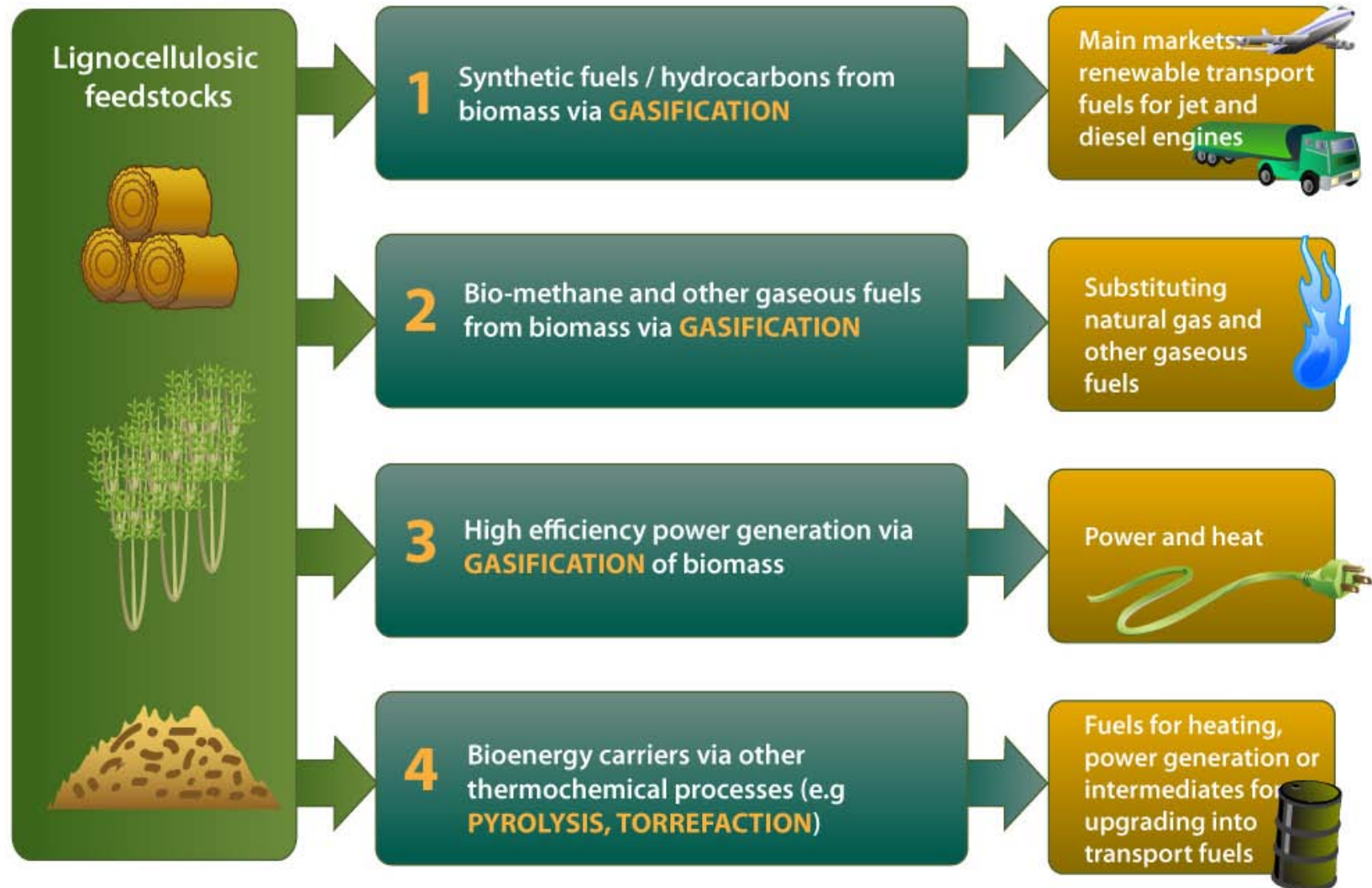
- Enabling commercial availability of advanced bioenergy at large scale by 2020
  - including advanced biofuels covering up to 4 % of EU transportation energy needs by 2020
- Strengthening EU world technology leadership for renewable transport fuels, in particular for diesel and jet engines, serving the fastest growing area of transport fuels in the world.

## 2. EIBI: Scope

- Bio-energies and bio-energy carriers produced at industrial scale
- Innovative technologies: not yet commercially deployed
- Large scale potential
- Need to have an impact on the market by 2020
- European dimension

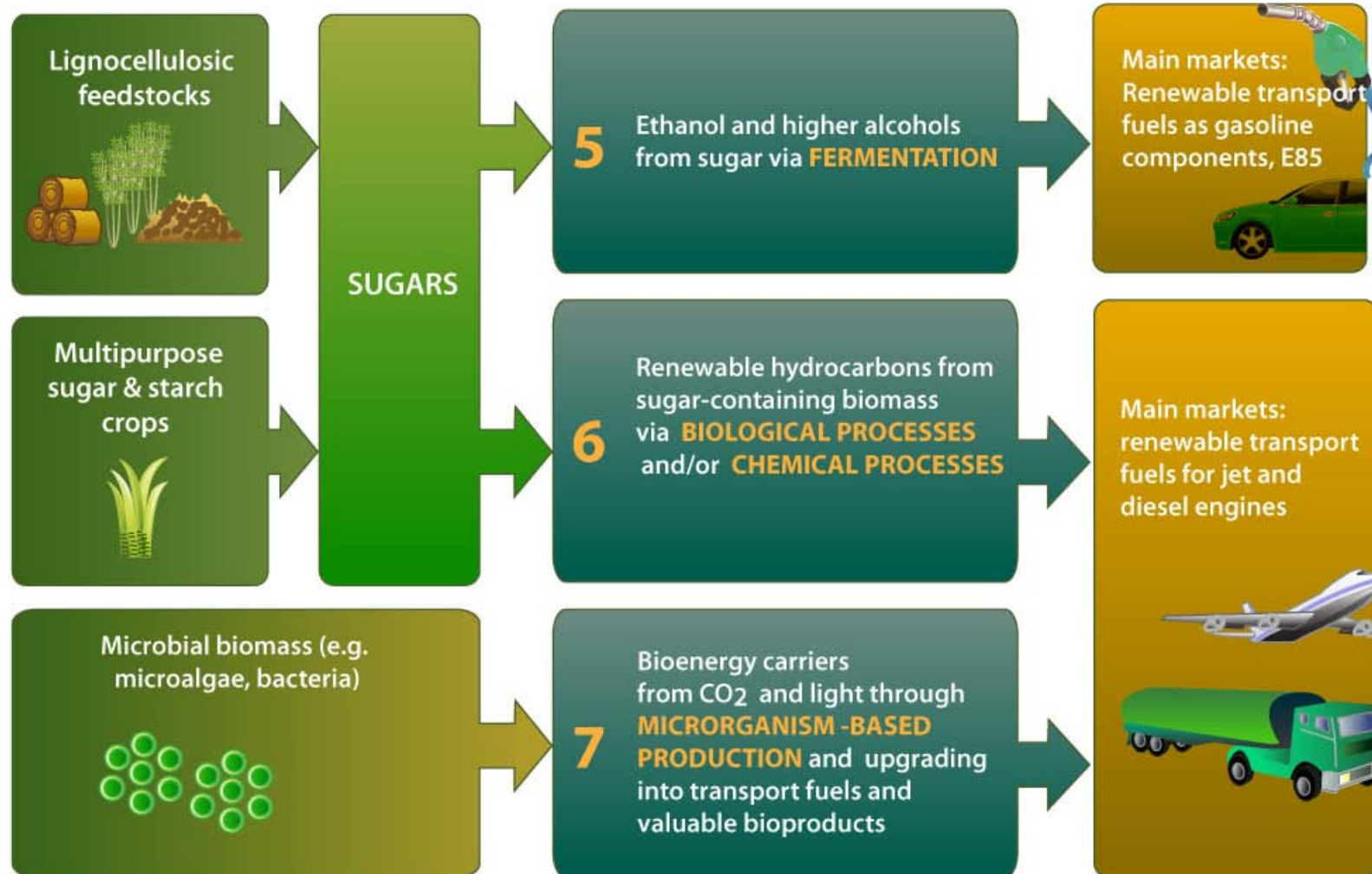
## 2. EIBI scope: value chains

### Advanced conversion paths based on thermochemical processes



## 2. EIBI scope: value chains

### Advanced conversion paths based on biological and chemical processes



### Core Activities

- Selection and funding of projects for:
  - Demonstration: outcome of demo unit should allow first commercial unit to be designed and performance guaranteed
  - „Flagship“ plant: first commercial scale unit

### Complementary activities

- *Availability of sustainable biomass feedstock: common topic with other bio based sectors*
- *Longer term Research & Development (EERA and FP)*

## 2. EIBI: core criteria for projects selection and evaluation

- **EU dimension**
- **Innovation**
- **Maturity level**
- **Industrial leadership**
- **Sustainability**
- **Feedstock and market potential**
- **Timeline**

## 3. Summary & next steps

- Funding latest stages of industrial development of innovative advanced bioenergy value chains is a considerable challenge: new tool and approach such as European Industrial Initiative are urgently needed.
- EIBI should be a flexible, coherent and open programme:
  - flexible, to adjust activities to available funding
  - coherent and open, by selecting and funding projects using sustainability based criteria in a competitive and transparent procedure.
- Earliest industry actors are ready to move now, others will follow over the next 3 to 5 years.
- Funding sources and governance are under active discussion
- Preparing launch at the Bruxelles SET Plan conference on 15 november 2010

# European Biofuels Technology Platform

## Contact us

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