European Industrial Bioenergy Initiative

Implementation Plan 2010-2012

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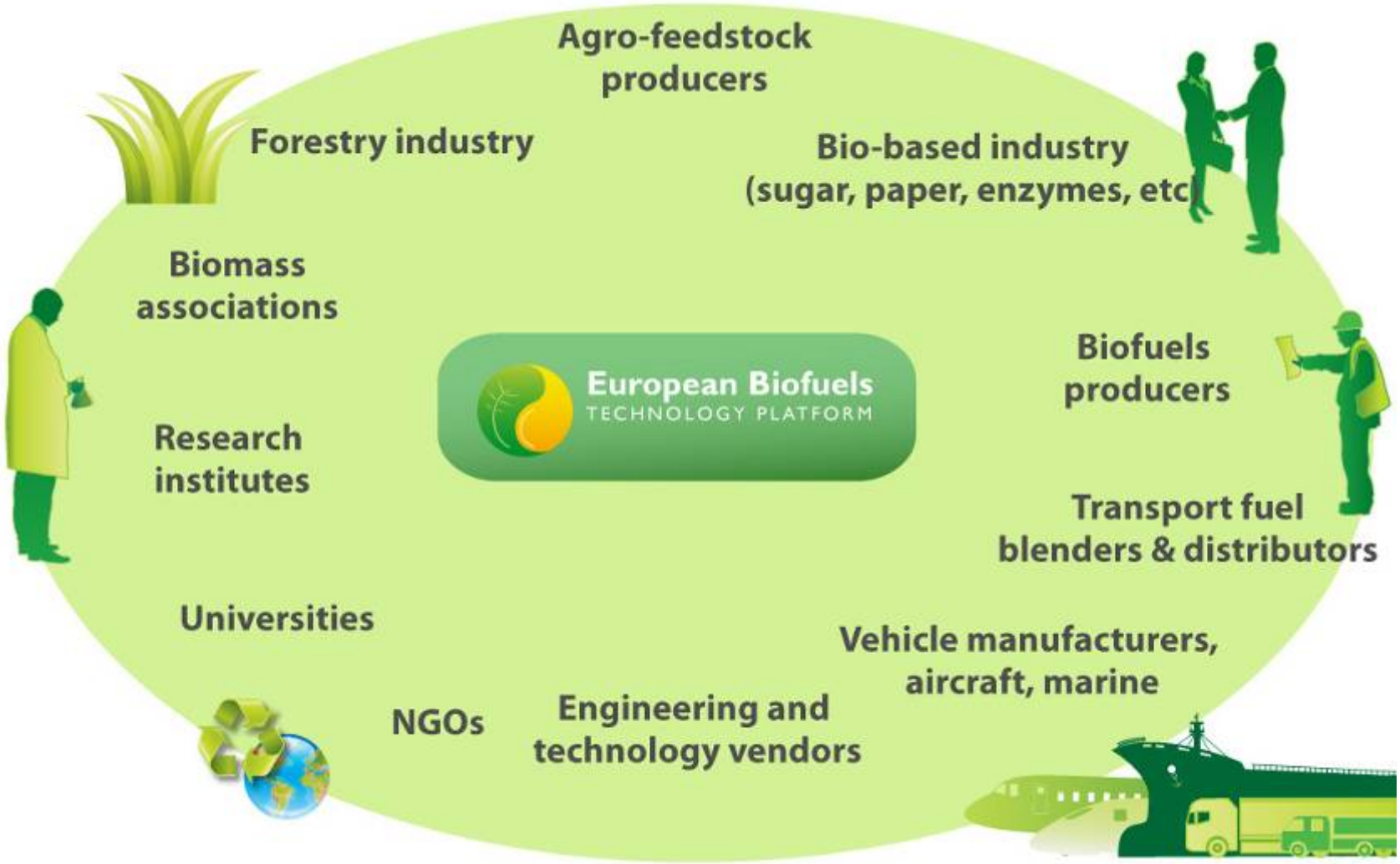
About EBTP


Agro-feedstock producers
Forestry industry
Bio-based industry (sugar, paper, enzymes, etc)
Biomass associations
European Biofuels
TECHNOLOGY PLATFORM
Biofuels producers
Research institutes
Transport fuel blenders & distributors
Universities
Vehicle manufacturers, aircraft, marine
NGOs
Engineering and technology vendors

2. EIBI Implementation Plan 2010-2012

1. Background, scope and objectives of the EIBI
2. Implementation actions for 2010-2012
3. Implementation modalities and monitoring
4. Complementary measures and activities

1. Background of the EIBI

- Bioenergy will play a key role in the long term energy strategy for all applications and especially the transport sector, contributing up to 14 % of the EU energy mix and up to 10% of energy demand in transport in 2020.

- Bioenergy contribution to 2020 targets could request up to 3 fold increase in total biomass use and a factor 10 for biofuels, creating a qualitative and quantitative challenge for resources.

- Current feedstock base and technologies will bring a significant contribution but are unlikely to meet these targets. Innovation is needed.

Current and advanced bioenergy value chains - multiple options for feedstocks, conversion processes and end use

Feedstocks

Lignocellulosic energy crops
- Energy grass
- SRC

Multi purpose crops
- Sugar crops
- Oil crops
- Starch crops

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

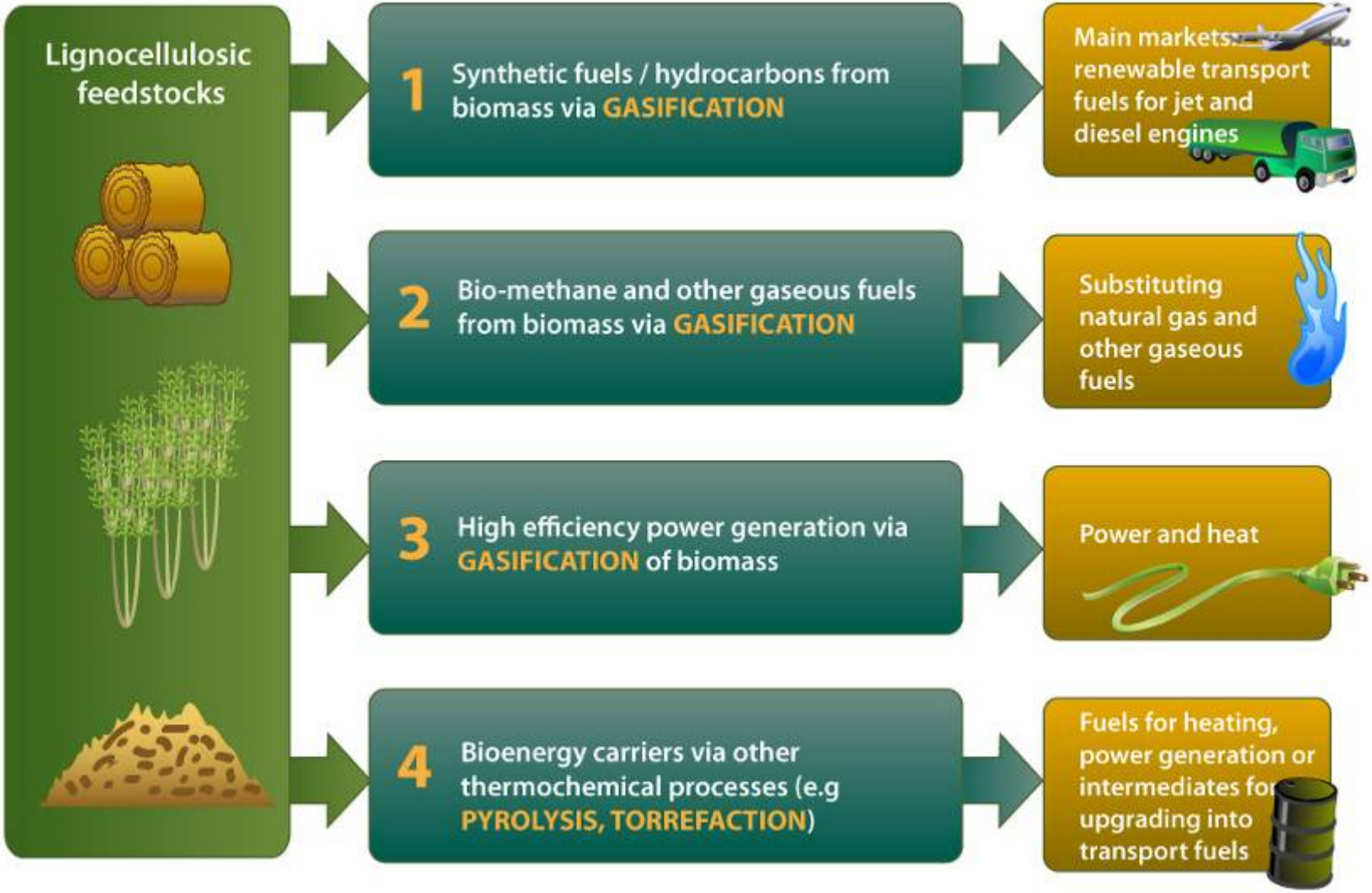
Liquid
- Fatty Acid Methyl Ester (FAME)
- Ethanol
- Methanol
- Butanol
- Alkanes/hydrocarbons
- Hydrogenated Vegetable Oils
- Biomass to Liquid (BtL)
- Jet Fuel

Gaseous
- Methane/ Synthetic Natural Gas (SNG)
- Dimethylether
- Hydrogen

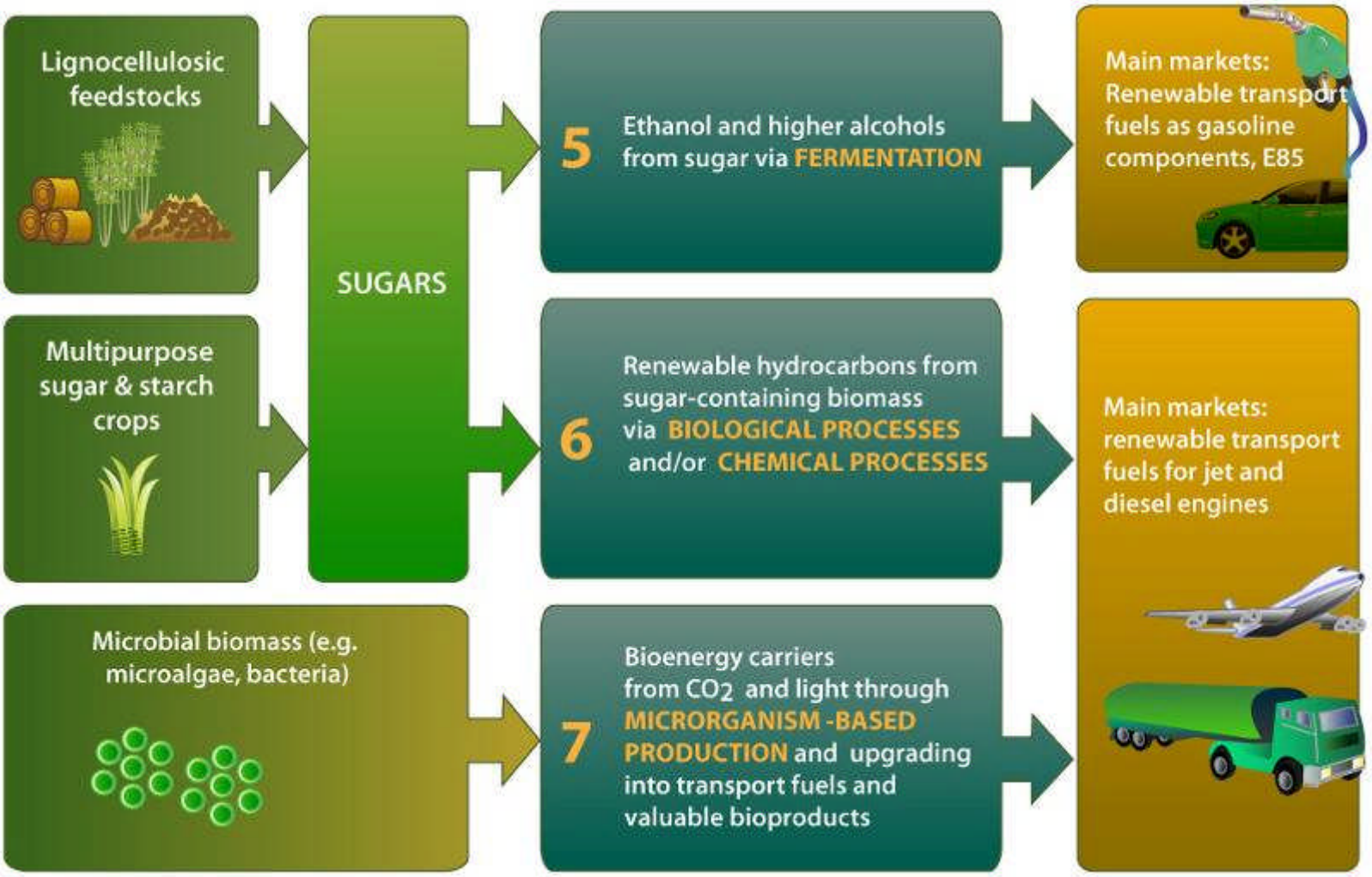
Heat

Electricity

Advanced value chains based on thermochemical processes



Advanced value chains based on biological and chemical processes



1. Scope and objectives of the EIBI

Scope

- Bio-energies and bio-energy carriers
- Innovative value chains
- Large volume potential
- Impact on the market by 2020
- European dimension

Goal

- To accelerate the commercial deployment of advanced technologies

Objectives

- Enabling commercial availability of advanced and sustainable bioenergy at large scale by 2020.
- Strengthening EU world technology leadership for renewable transport fuels.

2. Implementation actions for 2010-2012

- Selection and funding of demonstration and flagship plants
  - Demonstration: outcome of demo unit should allow first commercial unit to be designed and performance guaranteed
  - Flagship plant: first commercial scale unit
- One of 7 value chains or combination of them. No exclusion a priori.
- Projects will be selected on the basis of sustainability based, transparent selection criteria.


Abengoa


Chemrec


Algafuel

2. Implementation actions for 2010-2012

- Overall **estimated** costs for 2010-2012

  Assuming that for each of 7 value chains one demonstration and one flagship project would be selected, public and private funding of up to 2600 M€ will be required.

- Demo plants: At least 50% of project cost will be covered by private actors. The remaining public funding will be provided as grants to be completed with public loans.

- Flagship plants: Public funding (up to 50% of project cost) would be provided mostly as loans and/or public guarantees for private loans.

- Ongoing discussion of public funding sources and modalities.

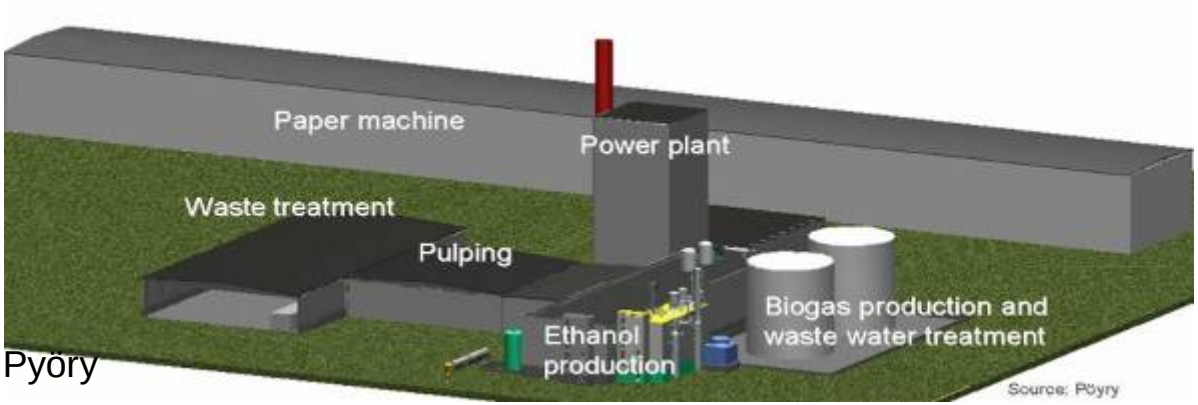
3. Implementation modalities and monitoring

- **Calls for Expression of Interest**

- **Project eligibility and selection criteria:**
  EU dimension, sustainability, maturity level, industrial leadership, innovation, feedstock and market potential, timeline

- **Key performance indicators**

KIT - Bioliq



Pyöry

4. Complementary measures and activities

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



3. Summary

- By funding latest stages of industrial development of innovative advanced bioenergy value chains EIBI addresses a critical issue and a considerable challenge.
- EIBI should be a flexible, coherent and open programme:
  - flexible, to adjust activities to priorities of MS and available funding
  - coherent and open, by selecting and funding projects using sustainability based criteria in a competitive procedure.
- Earliest industry actors are ready to move now, others will follow over the next 3 to 5 years.
- Relevant funding levels and tools as well as public-private partnership governance are now on the critical path for the implementation of EIBI.