A European Public Private Partnership for Bio-based Industries

Nathalie Moll, EuropaBio
EuropaBio

- The European Association for Bioindustries
- Created in 1996 to provide a voice for the biotech industry in Europe
- Representing the entire biotech sector: Healthcare, Agriculture and Industrial
- 56 corporate members operating worldwide, 14 associate members & BioRegions as well as 19 national biotechnology associations (2000 SMEs)
The Bioeconomy

- Natural resources
- Climate change
- Food
- Non-food
- Biomass
- Energy security
- Sustainable production
- Public health
- Economic and social development
- Food security

CSA Marine Biotech – Final Conference
Bio-based industries

Biorefinery concept

1. Renewable Feedstock

2. Conversion into everyday products

3. Use and recovery to close the loop

CSA Marine Biotech – Final Conference
Bio-based products

- Cosmetics
- Vitamins B2
- Food - Baking
- Dyes for textile
- Bio-based polymers
- Biofuels
- Antibiotics - Cephalaxin
- Pulp and paper - bleaching
Why the bioeconomy?

Reducing dependence on non-renewable resources as well as mitigating and adapting to climate change.
Why the bioeconomy?

- **Creating jobs and maintaining European competitiveness**: €2 trillion and employs more than 22 million people, 9% of total employment in the EU.
- **Revitalising rural and coastal areas**
- **Added value**: €1 invested in EU-funded bioeconomy research and innovation is estimated to trigger €10 of value added in bioeconomy sectors by 2025.
Where are we in Europe?

• Excellent knowledge base
• World leader on industrial biotechnology
• High appreciation towards sustainability

But…

• Lagging behind on implementation & market development
• Strong regulatory environment which tends to slow down developments & industrial growth
• Lack of long term vision and policy coherence
Pre-requisites for a competitive bio-based industry

- Need a coherent, comprehensive and integrated policy
- Ensure access to renewable raw material at competitive prices
- **Support more targeted research and innovation (and particularly) demonstration projects**
- Support market creation and stimulate market demand.
Bridging the gap between research and market

- **Problem**: Time lag from research results to marketable products
- **Outcome**: EU research commercialised elsewhere
- **Root Cause**: Poor access to public money for high-cost demo and flagship plants (e.g., biorefineries)

→ Need for an EU biobased industries PPP
Brazil, China and the US are making significant public investments in bringing biorefineries to commercial scale

**US**
- High targets for the replacement of fossil transportation fuels
- Wide range of support schemes including grants, tax credits, loan guarantees, etc
- Focus: bioethanol
- Public support last 5 years: ~€1.2 billion

**CHINA**
- Large-scale investment in biorefineries
- Plan to substitute 20% of crude oil imports by 2020
- Target of 1.7bgy ethanol by 2010

**EU**
- High targets for the replacement of fossil transportation fuels
- Focus: biodiesel/biochemicals
- Public support last 5 years\(^1\): ~€200 million

**BRÁZIL**
- World leading first generation biofuel production
- Some commercial 2G bagasse refineries in operation
- Aggressive government growth targets for bioethanol by 2025

---

1. Estimated funds provided by FP6 and FP7 to biorefinery-related projects, Source: US Department of Energy, EU, World Economic Forum, Bio-economy.net
Background of BRIDGE

• Horizon 2020 aims at tackling societal challenges by helping to bridge the gap between research and the market

• This market-driven approach will include creating Public-Private Partnerships to bring together the resources needed for addressing specific societal challenges including the bioeconomy

• A possible PPP in the field of bio-based industries explicitly mentioned in:
  • Horizon 2020
  • European Bioeconomy Strategy
  • New Industrial Policy Communication
Overall objective of BRIDGE

“Foster "radical innovation", from R&D and deployment to market pull, to deliver biobased products superior, or at least comparable to, non-biobased products in terms of price, performance and availability, and environmental benefits”

- **Feedstock**
  - Fostering a sustainable biomass supply and building new value chains

- **Biorefineries**
  - Optimising efficient processing through R&D and upscaling in pilot, demo/flagship biorefineries

- **Markets, products and policies**
  - Developing markets for biobased products and optimising policy frameworks
An integrated value chain approach
Project structure of BRIDGE

- Biomass supply
- Biorefineries
- Products /Markets

R&D projects

Cross cutting issues

Value Chain demonstration projects

Flagships
Value chain demonstration projects

- **Value Chain 1**: From lignocellulosic feedstock to advanced biofuels, biobased chemicals and biomaterials
  - Realising the feedstock and technology base for the next generation of fuels, chemicals and materials
- **Value Chain 2**: The next generation forest-based value chains
  - Utilisation of the full potential of forestry biomass by improved mobilisation and realisation of new added value products and markets
- **Value Chain 3**: The next generation agro-based value chains
  - Realising the highest sustainability and added value by improved agricultural production, and new added value products and markets
- **Value Chain 4**: Emergence of new value chains from (organic) waste
  - From waste problems to economic opportunities by realising sustainable technologies to convert waste into valuable products
- **Value Chain 5**: The integrated energy, pulp and chemicals biorefineries
  - Realising sustainable bio-energy production, by backwards integration with biorefinery operations isolating higher added value components
R&D Projects

- Foster a sustainable biomass supply to feed both existing and new value chains
  - Increase biomass production by improving agricultural practices and taking advantage from local biodiversity (complementary to the European Innovation Partnership on “Agricultural Productivity and Sustainability”)
  - Mobilising an increasing supply (harvesting collection, storage)

- Optimise efficient processing through R&D and pilot biorefineries
  - Primary conversion processes
  - Secondary conversion processes

- Developing innovative products and accelerating market pull for bio based products
  - New materials & products
  - New application and market development
Supporting projects

- **Clustering and Networking**
  - Key role in the creation of new value chain by connecting agriculture, industry and research network across Europe

- **SME engagement**
  - Supportive measures for SMEs to facilitate active involvement and participation

- **Standards and Regulations**
  - Actively contribute to the development of new standards (CEN)

- **Feedstock sustainability and LCA**
  - Assessment of methodologies for addressing sustainability criteria of the projects and the environmental footprint of the products developed
Thank you

EuropaBio

ib@europabio.org