

A PUBLIC PRIVATE PARTNERSHIP  
ON BIO-BASED INDUSTRIES

## Realising the bio-based economy potential in Europe

Iz znanosti v gospodarstvo



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CE PoliMaT  
Bio-based Industries Consortium



REPUBLIC OF SLOVENIA  
MINISTRY OF EDUCATION,  
SCIENCE AND SPORT

Investing in your future  
SLOVENIA'S NATIONAL INSTITUTE FOR  
TECHNOLOGICAL RESEARCH AND  
INNOVATION

## CE PoliMaT - Center of Excellence for Polymer Materials and Technologies

- Independent private non-profit center of excellence
- Unique collaboration between academia and industry
- Focused on innovation in the field of advanced polymer materials and technology
- Founded in 2010
- HQ Ljubljana, Slovenia





## Founders



- Universities
- Research Institutes
- Industry
  - Chemistry and biopharmaceuticals
  - Construction and building materials
  - Automotive
  - Renewable energy sources
  - Medical devices



77 innovations → 33 prototypes  
→ 17 with high market potential  
→ 3 start ups



Liquefied  
Biomass

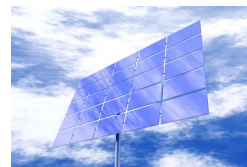
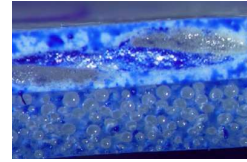
Nano-ZnO  
UV protection





## Advance material applications

1. Nanomaterials, polymer composites and nanocomposites with significantly improved or new properties
2. Coatings and adhesives
3. Health (implants, wound healing, drug delivery systems)
4. Photovoltaic (plastic solar cells, color selective coatings)
5. Agriculture (micro irrigation, microencapsulated fertilizers, pesticides)
6. Microelectronics, nanoelectronics and optoelectronics, sensors, energy storage



## Support new firm development

- Development of prototypes for potential commercial use
- Protection of intellectual property
- Market research to establish the commercial potential
- Feasibility studies and preparation of business plans
- Management and advisory support
- Assistance in identifying funding for the each stage of the commercialization process



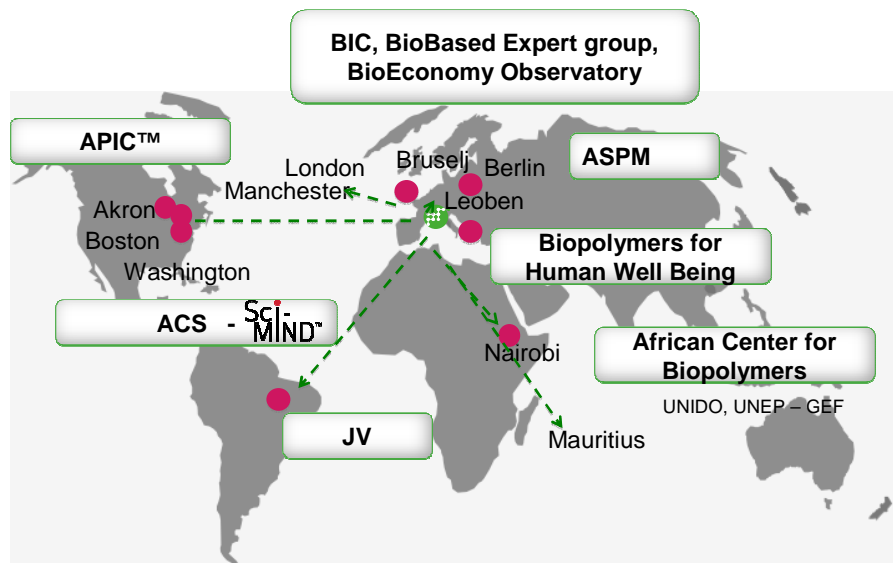



## CE PoliMaT



**Brings together innovative minds from diverse fields and countries to harnessing the power of biopolymers**




**To improve human wellbeing and enhance global competitiveness**







**Bio-based Industries Consortium**




- 65 Full members
  - 39 Large industries
  - 15 SMEs
  - 11 Clusters
- 90 Associated members
  - 24 Universities
  - 51 RTOs
  - 8 European trade organisations
  - 4 Associations
  - 3 European Technology Platforms (ETPs)






**The Bio-based Industries Initiative**

- A Public-Private Partnership (PPP) between the Bio-based Industries Consortium and the EU
- A **joint** commitment of €3.8 billion over 2014-2020
  - €1 billion (EU)
  - €2.8 billion (Biobased Industries Consortium)
- Multi-annual funding programmes for bio-based projects
- Enabling rural development and re-industrialisation in Europe



## What's in it for Europe?

- |   |   |
|---|---|
|  <p><b>Growth</b></p>              | <ul style="list-style-type: none"> <li>A global bio-based market estimated at €200 billion by 2020*</li> </ul>  |
|  <p><b>Jobs</b></p>                | <ul style="list-style-type: none"> <li>Create over 1 million jobs between 2010 and 2030 mainly in rural areas**</li> </ul>  |
|  <p><b>Energy and Products</b></p> | <ul style="list-style-type: none"> <li>Reduce dependence on imports with locally sourced and produced goods and products***</li> </ul>  |
|  <p><b>Climate</b></p>             | <ul style="list-style-type: none"> <li>Bio-based Industries PPP derived bio-based products can achieve an average GHG emissions reduction potential of least 50% compared to fossil alternatives****</li> </ul> |

Sources:

\* The Future of Industrial Biorefineries, World Economic Forum, 2010

\*\* Next generation ethanol and biochemicals: what's in it for Europe?, Bloomberg New Energy Finance, 2010

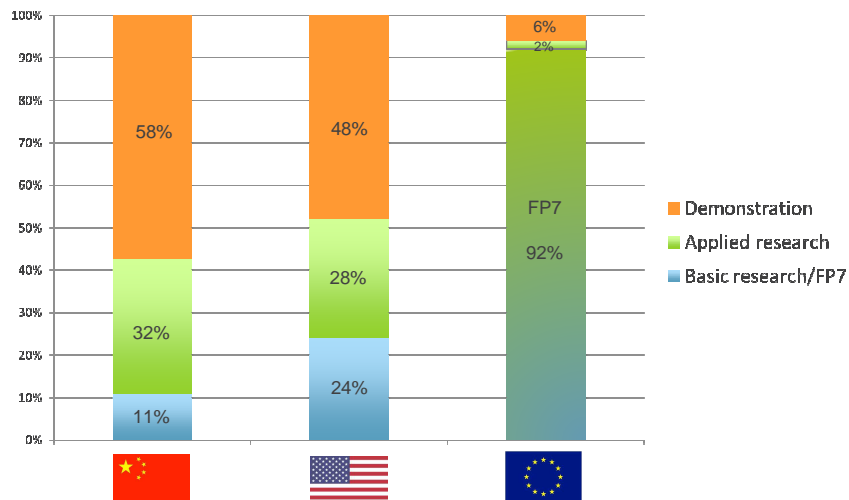
\*\*\* Innovating for sustainable growth: a bioeconomy strategy for Europe, European Commission, 2012

\*\*\*\* Strategic Innovation and Research Agenda (SIRA), Biobased Industries Consortium, 2012

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## EU support for demonstration?

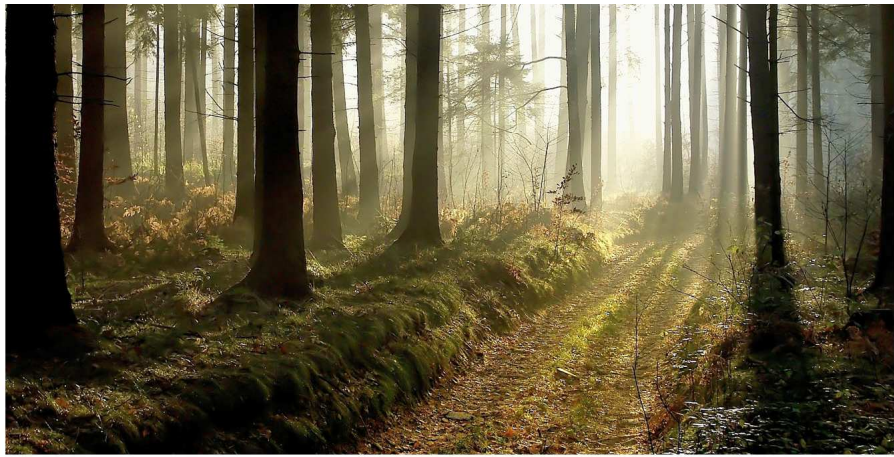
International benchmark on the share of basic, applied and development activities



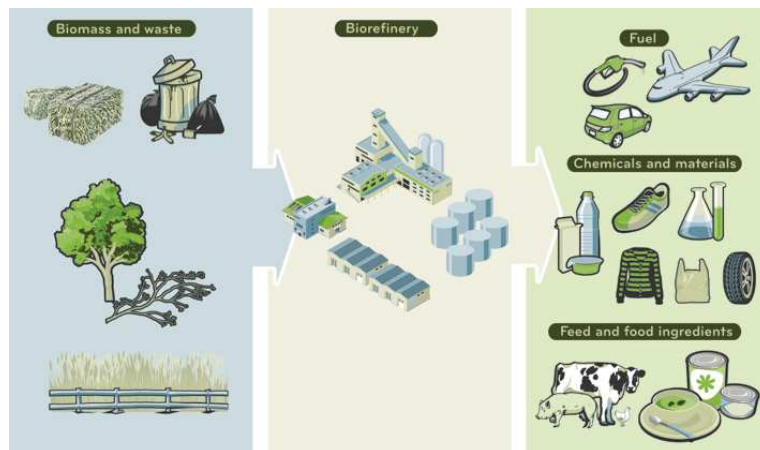
Source: Key Science and Engineering Indicators, National Scientific Board, 2010 Digest, NSF, <http://cordis.europa.eu/erawatch>, OECD "Research & Development Statistics"



Strategic Innovation and Research Agenda



## The bio-based economy concept



## Our sectors



Stage 1 - Reinforce innovation and extend current infrastructure across the economy

## The bridges



Stage 2 - Build and strengthen value chains across industry sectors



## The PPP community



Stage 3 - Realise a connected biobased economy from field to end consumer

## Focus on Five Value Chains

- **Value Chain 1:** From **lignocellulosic feedstock to advanced biofuels, bio-based 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

## Different types of projects

### A balanced combination of projects:

• **R&D PROJECTS** focused on filling the gaps in technological innovations: dedicated projects on the development of specific technologies and concepts needed to realise the value chains, and proving the principles in pilot installations

### • DEMONSTRATION PROJECTS

- To integrate and deploy technologies and R&D results into actual value chains
- To bring technology close to commercial scale through upscaling in demonstration activities

### • FLAGSHIP PROJECTS

- To optimise technology for biomass conversion and ensure price-competitiveness: both by building new operations and upgrading existing and abandoned industrial sites to be converted into biorefinery operations
- Each value chain area will lead to at least one flagship project.

• **SUPPORTING PROJECTS** mainly include Research activities, focused on solving cross-cutting issues arising from the Value Chain demonstration projects.

## Call procedure

### Bio-based Industries Consortium

*Per value chain taskforces are composed by BIC partners from different sectors*

1. BIC Programming WG (and Task Forces) prepares multi-annual roadmaps

2. BIC Programming WG prepares annual call texts

### Bio-based Industries PPP

Scientific Committee  
Member State Committee

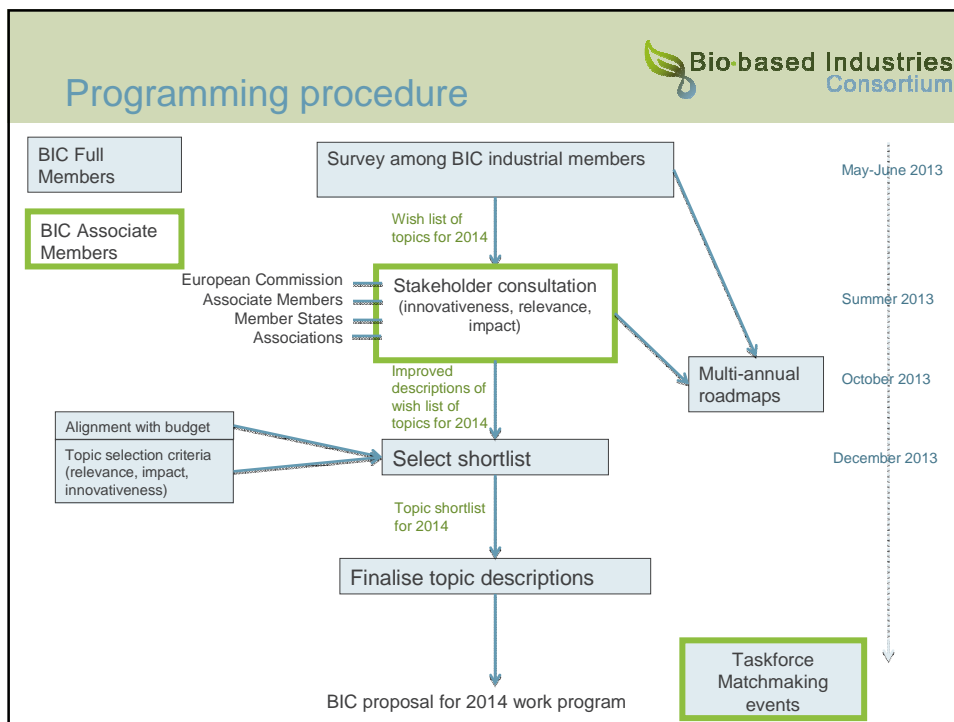
3. **BBI**: first discussion with scientific committee and Member State committee

4. **BBI** publishes the (open) calls

5. **BBI** organises evaluation by independent experts (based on **excellence**)

6. **BBI** negotiates and signs contract with winning consortia (consortium agreement and grant agreement)







## BIC Full membership

**Full Membership is open to industrial and commercial companies, or any other kind of legal entity representing industrial and commercial companies, which are active in the field of bio-based industries**

- The application consists of:
  - Organisation profile
  - A signed commitment form
  - For SME-clusters, mandate letters of the representing SMEs are included
- Annual fee (2013)
  - Category A-member (bigger industries): 30k Euro
  - Category B-member (SMEs and SME clusters): 5k Euro

## BIC Associate Membership



**Associate members are legal entities representing industries or having core research activities/expertise within the field of biomass, agriculture, forestry, biotechnology and bio-based industries but are not companies active in the field of bio-based industries**

- The application consists of:
  - Organisation profile
  - A signed commitment form
- Annual fee (2013)
  - Category DEF-members: 1k Euro



## How to join the CE PoliMat cluster for BBI?

- Sign the mandate letter
- Info point: [maja.berden-zrimec@polimat.si](mailto:maja.berden-zrimec@polimat.si)

### **Benefits:**

- Access to programming document
- Information on on-going and planned activities
- Support by joining the project consortiums.



Center of Excellence

**PoliMaT®**

Polymer Materials and Technologies

*In the field of polymer materials and technology, CE PoliMaT ensures the transformation of research excellence into products and services in high-tech niche markets, as well as supports job creation and the transition to a low-carbon society.*

## Thank you!

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