The new Bio-based Industries Initiative public-private partnership bridging the gap between lab and market and meeting societal challenges.

Nelo Emerencia
Director Programming
Vilnius, Lithuania, 17 October 2018
BBI JU is a Public-Private Partnership (PPP) implementing the programme for developing sustainable and competitive bio-based industries in Europe.

Partners:
- European Union (via European Commission)
- Bio-based Industries Consortium (BIC)

www.bbi-europe.eu
Focus of BBI JU Programme

‘non-food biomass’
Expected impact for Europe

- 50% greenhouse gas emissions by 2050 compared to 1990 levels

+20% biomass supply by 2030

400,000 skilled jobs by 2020 rising to 700,000 skilled jobs by 2030
80% of which will be in rural areas

The aim is to replace at least 30% of existing petroleum-based products with better, more sustainable and economically-viable versions by 2030.
BBI JU - Governance

Public partner
Represented by EC 25% contribution in BBI JU

Private partner
Represented by BIC 75% of contribution in BBI JU

BBI JU

Programme office team: 23

Governing Board (10 seats)

Executive Director

Advisory bodies

States Representatives Group (28 MS + 10 AC)

Scientific Committee (15 Seats)

BBI JU to implement the programme
Why a Joint Technology Initiative with the EC

To ‘de-risk’ an emerging industry through:

- A clear framework that brings clarity for activities & investments
- Long term stability and predictability
- A joint approach, across sectors, across Member States
- Joint financial commitment and a jointly defined programme, that will unite parties that would otherwise find these activities too risky for an individual sector/company
- Leverage further investments

Industry driven and therefore result and market-oriented
Where we are coming from…
Where we are going to …

Build and strengthen value chains across industry sectors
Where we want to be…

Value chains across industry sectors across Europe
The role of the Bio-based industries consortium (BIC)
Sustainable, circular bio-based value chains

Biomass and organic waste

From the agro-based industries
- Feedstock originating from the agriculture and agro-food industries
- Agricultural crops such as flax, hemp and fibre
- Co-products, side streams, and residues from the agriculture, including animal manure and from the agro-food industries, including residues from food processing plants

From the forest-based industries
- Feedstock originating from the forest and forest-based industries
- ‘Woody and non-wood forest feedstock’
- Co-products, side streams, and residues from the forest and forest-based industries, including the wood industry, saw mills, Paper and Pulp

From the aquatic-based industries
- Feedstock originating from the aquatic and aquatic-based industries, including aquaculture, the fish and fish processing industries
- Co-products, side streams and residues from the aquatic and aquatic-based industries

Bio-waste and CO₂
- Biodegradable garden and park waste
- Food and kitchen waste from households, restaurants, caterers and retail premises
- Waste water and sludge
- CO₂

Bio-based products & markets
- Bio-based chemicals
- Bio-based plastics, polymers, materials, packaging
- Specialties (for example bio-based surfactants, lubricants, pharmaceuticals, nutraceuticals, cosmetics)
- Textiles
- Food ingredients and feed
- Advanced biofuels

Details: see the SIRA
Long-term strategy

Strategic Innovation and Research Agenda (SIRA):

• sets out the main technological and innovation challenges to developing sustainable and competitive bio-based industries in Europe. It reflects BIC’s vision;

• identifies activities for research, demonstration and deployment for bio-based industries
  • to be taken up by the Joint Technology Initiative on Bio-based industries (BBI Initiative)

• updated in 2017

• available at: http://biconsortium.eu/library/bic-documents
Long-term strategy and annual work plans

Key principle in the SIRA:

‘Multi-value-chain’ approach, pursuing crossover between ‘traditional’ value chains, providing more opportunities to convert the feedstock into chemicals, materials, ingredients for food and feed, and advanced transport fuels.

At the heart of the SIRA are the components of circular value chains, shown on the right:

These form the four strategic orientations of the bio-based industry in Europe.

The annual work plans, launched as calls for proposals, contain topics in each strategic orientation:

- these topics are ‘actions’ at specific stages in the development and innovation process;
- expressed as technology readiness levels (TRL)
Research and innovation actions: TRL 4-5; 30.5% of budget
Innovation actions – demonstration: TRL 6-7; 30.5% of budget
Innovation actions – flagship: TRL 8; 35.5% of budget
Coordination & support actions; 3.5% of budget
BBI Flagship & Demo on-going projects and Proposals selected for funding in Call 2017

- **Flagships**
  - AgriChemWhey
  - FUNGUSCHAIN
  - LIPES
  - DEMETER
  - PEference
  - GreenProtein
  - LigniOx
  - SYLFEED
  - AgriMax
  - URBIOFIN
  - Eucaliva

- **Demo plants**
  - BIOFOREVER
  - Pulp2Value
  - EMBRACED

- **Call 2017 (country of COO)**
  - EXILVA
  - PULPACKTION
  - BIOMOTIVE
  - BIOSKOH
  - Dendromass4Europe
  - LIGNOFLAG

**OPTISCOCHEM**: 3 DEMO plants will be involved in the projects. The locations are not confirmed yet. Two possible locations: Germany and Belgium.
BIC and our strategic recruiting programme
BIC membership (Sept. 2018)

Includes “food” clusters:
- Agrobusiness Park (DK)
- Cluster FOOD+i (SP)
- FlandersFood (B)

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Total (2018):

- LEs: 43
- SMEs: 173
BIC FM distribution per Country

BIC FM per Country (Sum)

1.00 14.00
Strategic recruiting: countries reports

- Country report available
- Country report in progress
- Object of CSA 2018.SO4.S2
Mostly «treated/recycled on site». **Possible to valorise part thereof into materials/products without negatively affecting agriculture business?**

Source: Official Statistics Portal
Use of forest residues in Lithuania

Can a fraction of these residual streams be valorised into materials/products?

Source: Official Statistics Portal
Examples of BBI projects - agriculture

- **FUNGUSCHAIN**: Extract value from the agricultural offcuts of commercial mushroom farming by processing them into bio-based functional additives and biopolymers using a cascading approach to separate the valuable components into a spectrum of products.
  
  Coordinator: Biodetection Systems
  
  [http://funguschain.eu/](http://funguschain.eu/)

- **GreenProtein**: producing high-added value, food-grade and fully functional proteins and other food ingredients, out of vegetable residues from the packed salad processing.
  
  Coordinator: Provalor
  
  [http://greenproteinproject.eu/](http://greenproteinproject.eu/)
BIC’s vision for a public-private partnership (2020-2030)
• **Research and Innovation** is expected to make a bigger contribution to achieving EU policy priorities in the future, in particular for the SDGs.

• The **circular bioeconomy** can bring huge opportunities in achieving the SDGs if managed sustainably and policy coherence is achieved.

• **Bio-Based Industries** mainly contribute to SDGs 2, 3, 6, 7, 8, 9, 11, 12, 13, 14, 15 and 17.

• A **continuation of the BBI JU under HORIZON EUROPE (2021-2028)** will therefore underline the EU commitment to the SDGs.
Impacts of BBI JU today

• **Mobilising innovation-driven private investment in Europe:**
  • Keeping investments in innovative production processes in Europe
    • growing number of proposals for demo’s and flagships from across EU, incl. from outside EU
    • high participation of SME: 38 % of beneficiaries; 27 % of funding

• **Structuring the bio-based economy and developing new industrial ecosystems:**
  • Developing new innovative value chains crossing boundaries
    • more sectors join and team-up with others, e.g. food industry with the chemical industry, etc., creating value from side and residual streams; utilising various competencies
    • wider geographical spread and stronger collaboration with EU regions for financing and deployment of new value chains

• **Aiming sustainable products and applications to meet demand/need:**
  • Demonstrating sustainable products and applications for many market segments
    • shorter time-to-market and sustainable end-of-life
    • increasing participation of brand owners and end users
2014 (“linear” value chain”: 1 feedstock, 1 product)

2018 (utilizing all components of the feedstock, and/or valorising side streams from food industry)
Future PPP programme 2021 - 2027

- **Create new, inclusive value chains** from feedstock to market application, driven by innovation and sharing benefits among all actors.

- **Production of feedstock, food & non-food**: co-production of food, feed, biobased products & materials, energy in a sustainable, circular manner. The focus is on “zero waste” value chains where all components of the feedstock are used in a sustainable way (additional partners: “Food & Drinks Europe”)

- **Valorisation of side and residual streams from all primary sectors**: agriculture including horticulture, food and beverages; forestry including paper & pulp; marine and aquatic including aquaculture; bio-waste from municipalities and urban areas (and CO₂ from operations and from the atmosphere) (developing partnership with e.g. “Municipal Waste Europe” or FEAD)

- **Better integration of the primary sector**: by analyzing the results of the BBI study on the primary sector (BBI, BIC, DG RTD, DG AGRI) and the workshop DG AGRI on “Best practices in integrating primary producers in the bioeconomy value chains”

- **Contribution to SDGs**: new value chains should include in a more efficient way primary sector AND brand owners/consumers, and SDG contribution measurement should be integrated at project level.
BIC’s vision 2050: European circular Bio-society
By 2050, Europe will be a competitive, circular bio-based society with informed citizens choosing a sustainable way of life, thereby supporting an economy that not only provides jobs but enhances the wellbeing of society and the environment.

Realising this vision in 2050 are five key drivers:

- Integrated, efficient production of food, feed, bio-based products and materials and energy to help foster food security and satisfy materials’ needs for a growing world population
- Resource-efficient and sustainable value chains benefit all actors, including the primary producers and create value for society
- Industrial and economic sectors operate in symbiosis, effectively collaborating across boundaries of geography and competences
- Carbon-neutral value chains mitigate climate change and contribute to UN Sustainable Development Goals
- Informed and participating consumers enable a sustainable circular bioeconomy
Our ‘pitch’ for BBI in Horizon Europe

A joint technology initiative (institutional Public Private Partnership) is the best instrument for the partnership to structure and mobilise industry in an emerging sector, to accelerate the establishment of a bioeconomy and bio-based industry across Europe, with a high leverage effect in terms of additional industrial investments.

An iPPP is also the best tool to build on successes of the existing BBI JU, foster the restructuring and mobilisation that have just started, learn from weaknesses, expand on strengths and broaden the partnership as needed.

• An iPPP with the industry in the lead is the best guarantee for applicable results, market orientation, and private investments
  • Broaden the partnership with strategic partners: both private & public from the primary sectors and market actors

• An iPPP can bring innovative and sustainable applications faster to the market
  • Shortening ‘time-to-market’ requires long-term commitment by the industry to invest in R&D and scale-up to commercial level operations
  • Industry is best placed to ‘cement’ the collaboration with MS and regions in physical investments where they make most ‘sense’.
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