



# The Bioeconomy Role in the Economic Recovery of the European Union on a Sustainable Basis

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# The Bio-based Industries Consortium

# BIC membership in figures

- > 240 industry members (large enterprises, SMEs and SMEs in clusters), includes brand owners/market actors
- *Sector represented:* Agriculture, food & feed, Aquaculture and marine, Chemicals and materials, Forestry and pulp & paper, Market actors, Technology providers, Waste management & treatment
- > 200 associate members i.e. universities, RTOs, associations, etc.





## *Mission*

- We connect industry, academia, regions and citizens to transform bio-based feedstocks into novel sustainable products and applications.
- We create circular bioeconomy ecosystems through investments, innovation and know-how.

# The bioeconomy and biobased economy in Europe

Bioeconomy  
**€ 2.4 trillion**

Bio-based industries  
**€ 0.75 trillion**



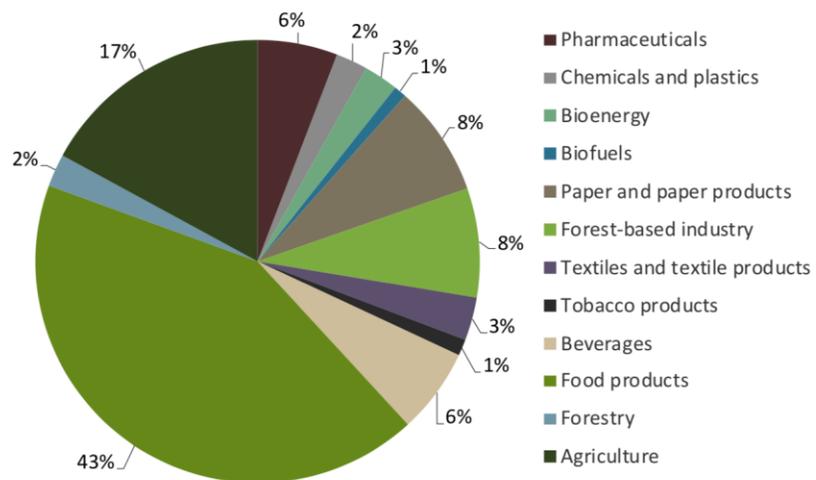
Bioeconomy  
**18.5 billion**

Bio-based industries  
**3.5 billion**

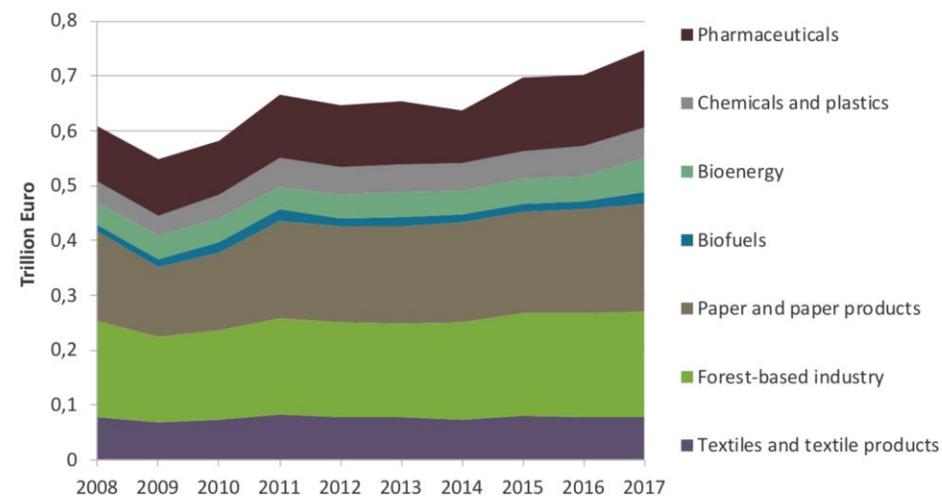


# Turnover of the EU bioeconomy

Turnover in the bioeconomy in the EU-28, 2017, total: 2.4 trillion Euro



Turnover in the bio-based economy in the EU-28, 2008–2017





**European policies:  
linking bioeconomy to circular economy,  
Green Deal and Green Recovery**

# Circular Economy: A key political concept in the EU since 2014

European Commission introduced several initiatives, re-enforcing link between industry and bioeconomy

## 2014-2015: Circular Economy Strategy and the related Action Plan “Closing the loop”

- Commission defines the “circular economy [as the economic space] where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised”
- But: “The circular economy is still in an early stage, stronger on paper than in practice.”

## 2020: (New) Circular Economy Action Plan “For a cleaner and more competitive Europe”

- Circularity is an essential part of a wider transformation of industry towards climate-neutrality and long-term competitiveness.
- Goal: **Scaling up the circular economy** from front-runners to the mainstream economic players
- Enable **greater circularity** in industry by supporting the sustainable and circular bio-based sector through the **implementation of the Bioeconomy Action Plan**

# What is the EU's understanding of the Bioeconomy.....

Circularity not (initially) part of European Commission definition

All sectors & systems that use / produce/  
process / are driven by biological resources

- Ecosystems on land and sea
- Primary production systems -  
agriculture, forestry, aquaculture /  
fisheries – **incl. waste/side streams**
- Food, feed, fibres, bio-based industry,  
fuels and bio-energy



# A Bioeconomy for Europe: First proposal in 2012

Proposal for a BBI JU one action point in 2012 Communication



## Communication on Bioeconomy – 2012

To pave the way to a more innovative, resource efficient and competitive society that reconciles food security with the sustainable use of renewable resources for industrial purposes, while ensuring environmental protection.

Food security, sustainable management of natural resources, climate change mitigation, reduced fossil-dependence, jobs creation and EU competitiveness

*Proposal for a BBI JU one action point in 2012 Communication*

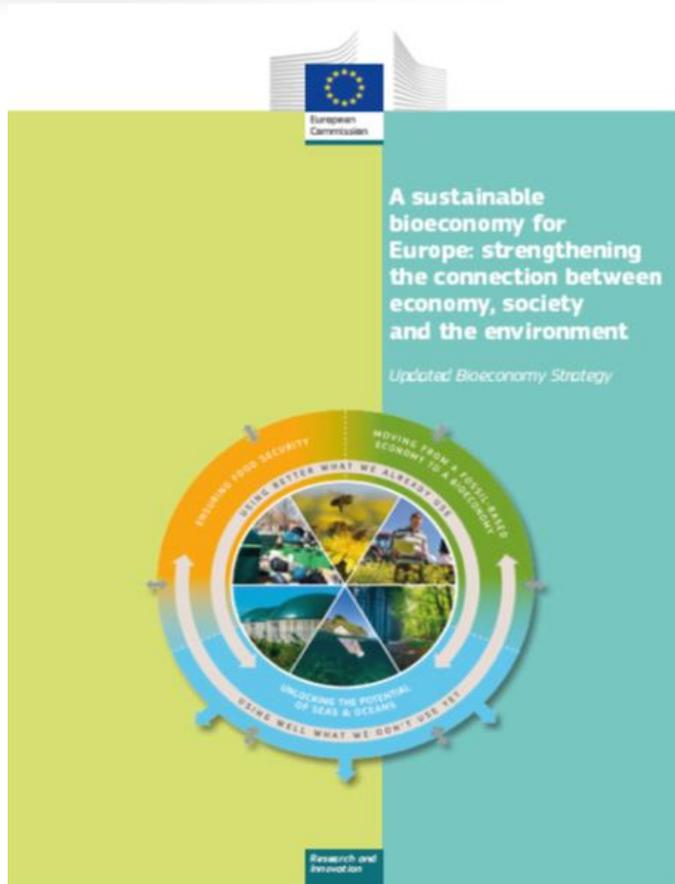


## Review of Bioeconomy Strategy – 2017

Good delivery, objectives still relevant, increasing importance, more focussed actions for evolved context (SDGs, renewed industrial policy, circular economy, ...)

# Up-dated Bio-economy strategy presented in 2018

A sustainable bioeconomy for Europe



...was developed jointly across different DGs (RTD, AGRI, ENV, MARE, GROW, JRC, CLIMA) to develop actions and ensure impact.

## The updated Bioeconomy Strategy aims to

- Link the sustainable use of renewable biological resources for food, feed, bio-based products and bioenergy, with the protection and restoration of biodiversity, ecosystems and natural capital across land and water.
- Step up action to ensure that the Bioeconomy provides a long-term balance of social, environmental and economic gains
- Have a stronger focus on sustainability and circularity

Source: European Commission

# The way towards a sustainable, circular bioeconomy

Three key actions

1

## STRENGTHEN AND SCALE-UP THE BIO-BASED SECTORS, UNLOCK INVESTMENTS AND MARKETS



**Mobilise** stakeholders in **development** and **deployment** of **sustainable bio-based solutions**



Launch the **EUR 100 million** Circular Bioeconomy Thematic **Investment Platform**



**Analyse enablers and bottlenecks** for the deployment of **bio-based innovations**



Promote and develop **standards, labels and market uptake** of **bio-based products**



Facilitate the **development of new sustainable biorefineries**



Develop substitutes to fossil based materials that are **bio-based, recyclable and marine biodegradable**

Source: European Commission

2

## DEPLOY LOCAL BIOECONOMIES RAPIDLY ACROSS EUROPE



**Launch a Strategic Deployment Agenda** for sustainable food and farming systems, forestry and bio-based products



**Launch pilot actions** for the development of **bioeconomies** in rural, coastal and urban areas



**Support regions and Member States** to develop Bioeconomy Strategies



**Promote education, training and skills** across the bioeconomy

3

## UNDERSTAND THE ECOLOGICAL BOUNDARIES OF THE BIOECONOMY



**Enhance knowledge** on biodiversity and ecosystems



**Monitor progress** towards a sustainable bioeconomy



**Promote good practices** to operate the bioeconomy within **safe ecological limits**



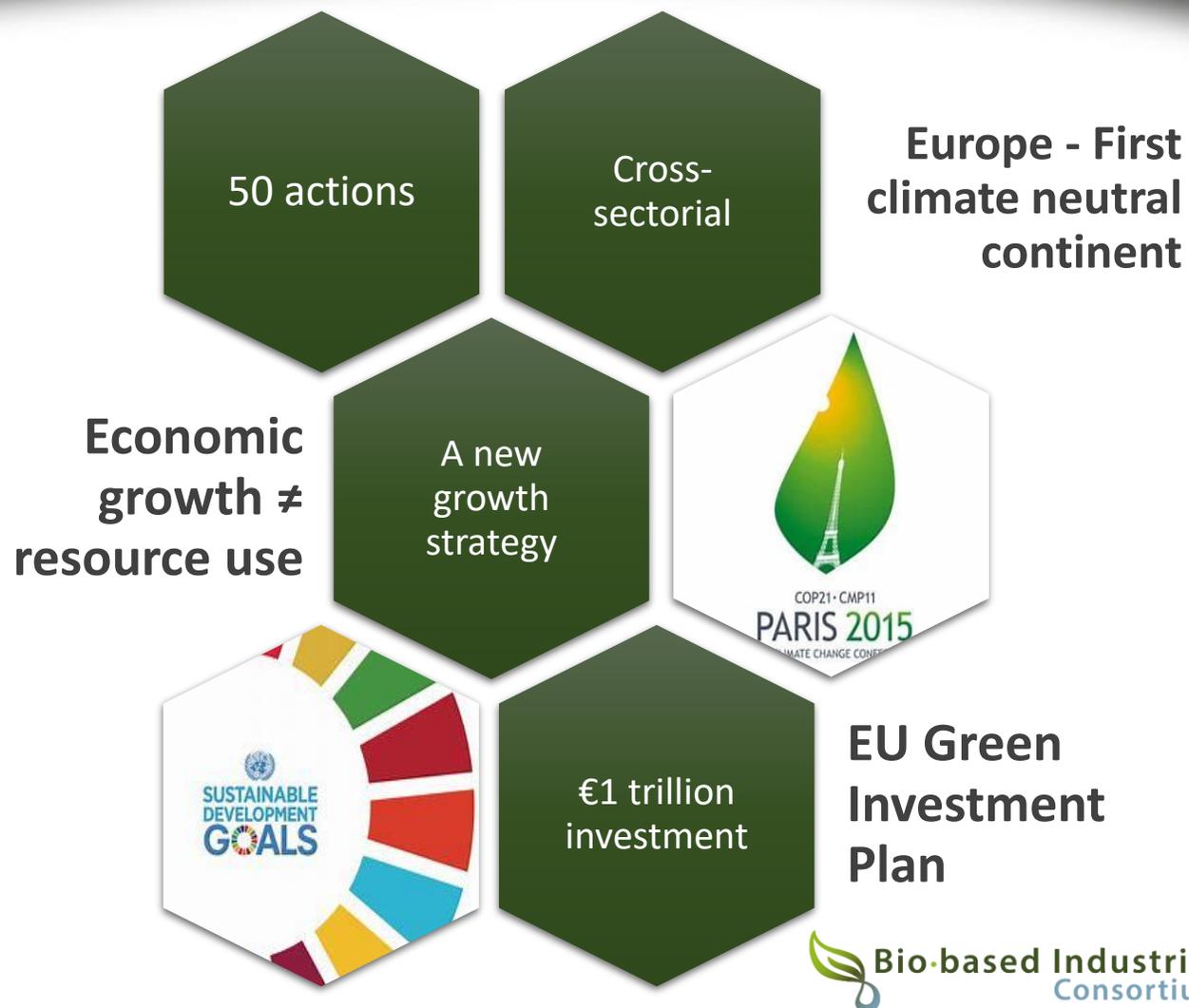
**Enhance the benefits** of biodiversity in **primary production**

# Introduction to the European Green Deal...

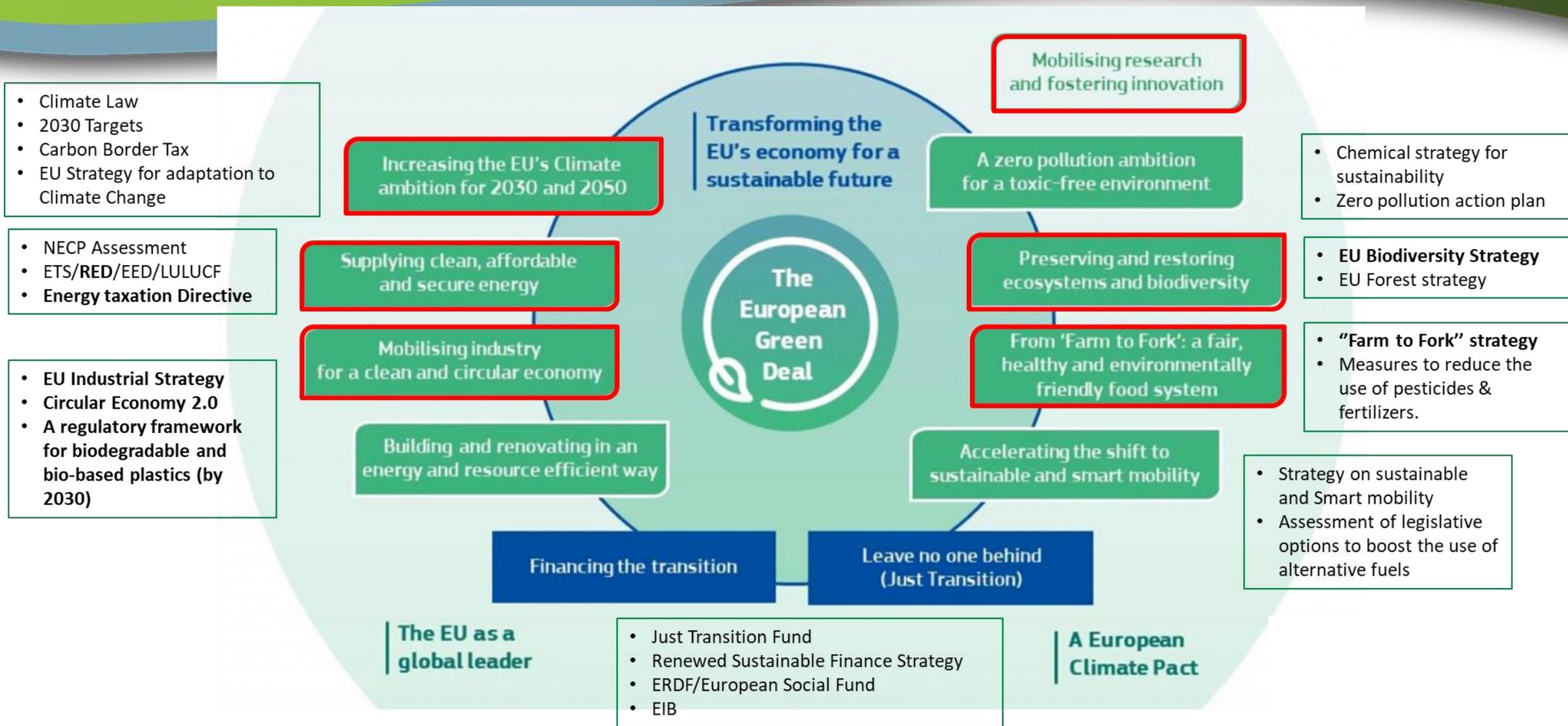


*"[...] It is a **broad roadmap** for a rapid transition to a cleaner continent and the **start of a journey**"*

EC President, Ursula Von der Leyen, 11/12/2019

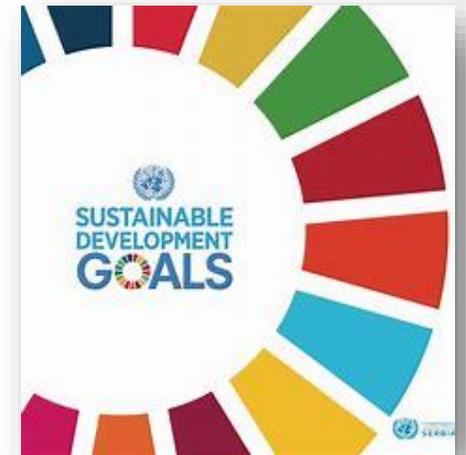


# What's in a deal...



# A few key takeaways..

- ❑ EU Green deal and its key policy measures represent a significant **opportunity for growth of the EU bio-based sector**, both within the Single market and outside of the EU (gaining access to new markets).
- ❑ EU Green deal provides concrete **incentives for the development of the bio-based sector**, provided that it functions in a circular manner and under stricter biodiversity requirements. (in respect of the “planetary boundaries”).
- ❑ EU Green deal has been broadly **supported by the EU Member States and EU Parliament**, providing a degree of predictability on the overall political direction and the acceptance of the suggested measures.
- ❑ EU Green deal has a **strong focus on sustainable development** being part of the Commission’s strategy on the implementation of the UN SDGs. It includes not only environmental, but also social and economic aspects of sustainability. Green Deal’s measures aim at **de-risking investments** in sustainable development projects, exporting EU policies through “green deal diplomacy” and promote sustainable business models, rather than single products.



# THE LINK BETWEEN THE BIOECONOMY AND THE GREEN DEAL

The bioeconomy will play an integral role in spurring on the EU recovery from the COVID-19 crisis by aligning the economy with the biosphere. The bioeconomy will thus improve resilience and competitiveness, providing long-term systemic solutions, and ensuring a just transition.

## EXAMPLES OF HOW THE BIOECONOMY CONTRIBUTES TO THE EUROPEAN GREEN DEAL:



### CLIMATE PACT AND CLIMATE LAW

Carbon sequestration in soil, blue carbon and forests and its storage in harvested wood products, together with material substitution of fossil-based products (plastics, energy, textiles), can **generate significant carbon savings** and make us fit for -55% by 2030.



### PROMOTING CLEAN ENERGY

Unavoidable **biowaste can be converted into energy** including biofuels for sectors in which electrification will remain challenging (aviation, maritime).



### INVESTING IN SMARTER, MORE SUSTAINABLE TRANSPORT

Use of cellulosic ethanol made from agricultural residues, such as wheat straw, in the transport sector can achieve **up to 95% emission savings** compared to fossil fuels<sup>3</sup>.



### STRIVING FOR GREENER INDUSTRY

Circular use of biomass **promotes resource efficiency and stimulates the production of high added-value products from side and waste streams**. Bark residues, e.g. can be used for extraction of protective compounds used for non-toxic treatment of wood-based construction materials<sup>4</sup>.



### ELIMINATING POLLUTION

**Circular bioeconomy maximises the use of side and residual streams** from agriculture, food-processing and forest-based industries, **thus reducing the amount of landfilled waste**.

Moreover, the use of bio-fertilisers, bio-pesticides and bio-based pest control can contribute towards achieving the Farm to Fork and Biodiversity Strategy's objectives of **reducing fertiliser and pesticide use and risk**.



### ENSURING JUST TRANSITION FOR ALL

The bioeconomy can **create 400 000 new green jobs by 2035<sup>5</sup>** in particular in rural and coastal areas if supported and deployed by regional and national strategies. Many bioeconomy opportunities also exist in urban and peri-urban areas.



### FINANCING GREEN PROJECTS

The **European Circular Bioeconomy Fund with a volume of up to €250 million will invest in innovative circular bioeconomy projects**, in the areas of agriculture, aquaculture and fisheries, the forest-based sectors, biochemicals and biomaterials and biomaterials.



### MAKING HOMES ENERGY EFFICIENT, RENOVATE

The use of biobased insulation materials such as cellulose fibre and sheep's wool can **effectively insulate buildings in a way that also minimises their embodied greenhouse gas emissions**.



### FROM FARM TO FORK

Algae farming can be a new source of renewable biomass for food and green products. Sustainable algae production has the advantage of achieving potentially high yields with minimum or no land and fertiliser requirements while enhancing biodiversity.

Moreover, the circular bioeconomy helps **to fight food waste by valorising it into a range of added-value products<sup>6</sup>**.



### PROTECTING NATURE

Developing sustainable bioeconomies can contribute to the **enhancement of biodiversity while improving the provision of ecosystem services**.



### LEADING THE GREEN CHANGE GLOBALLY

The **European Commission leads global bioeconomy initiatives**, such as the International Bioeconomy Forum and promotes the role of research and innovation as a key enabler in the global green transition.

For more information visit

<https://ec.europa.eu/research/bioeconomy/index.cfm>

# Green Recovery

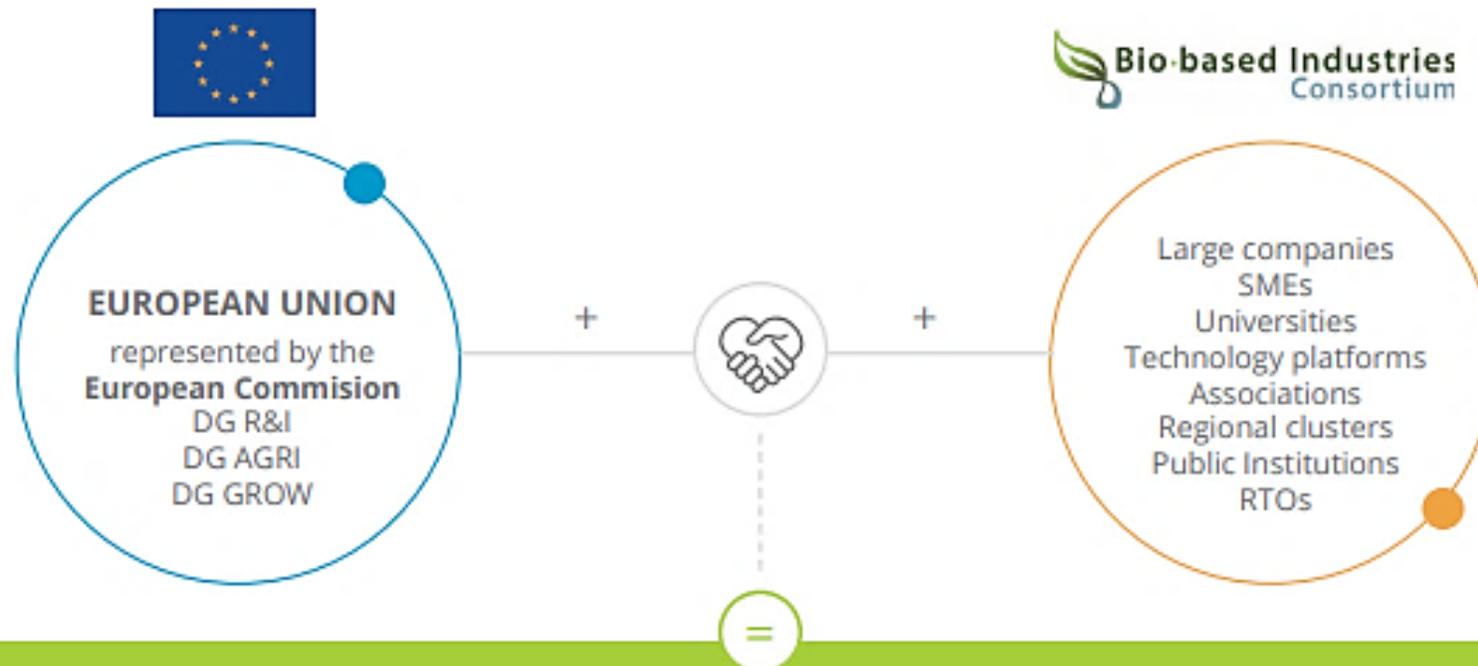
- Before the COVID-19 outbreak, the European Union set ambitious targets to reduce carbon emissions.
- Now in the midst of the pandemic, the EU has temporarily lifted state-aid rules allowing governments to steer companies through the crisis and to minimise job losses using public money.
- State aid can take the form of wage subsidies, tax and social contributions relief, financial support, and loans and guarantees via banks.
- By attaching green conditions when granting state aid and guarantees during the COVID-19 crisis, governments could push companies to accelerate the adoption of low-carbon and circular technologies after the crisis is over, and thus aim for a green recovery.
- In this way, state aid expenditures will not only promote the economic viability of companies, but also their environmental viability. This will accelerate the adoption of low-carbon and circular technologies.



The background is a collage of green-tinted images. At the top left, there are several mushrooms. Below them is a log with several circular cross-sections. In the center, there is a pile of tomatoes. On the right side, there are several pieces of laboratory glassware, including beakers and test tubes, some containing liquid. The entire image has a green overlay with white text.

# The BBI JU: a public private partnership

# BBI JU: Partnership between industry (BIC) and EC



**BIO-BASED INDUSTRIES JOINT UNDERTAKING (BBI JU)**

# Bio-based value chains envisioned in the BBI Initiative

## 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

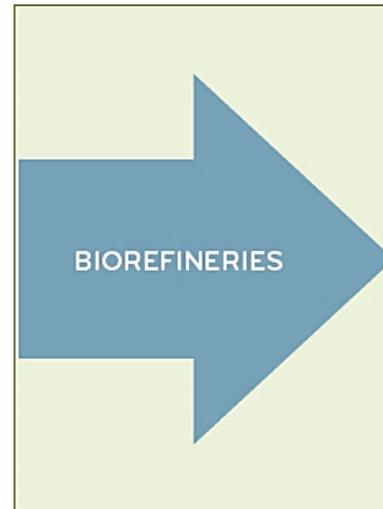
- Feedstock originating from the forest and forest-based industries
- 'Woody and non-wood forest feedstock'
- Co-products, side streams, and residues from the forest and forest-based industries, including the wood industry, saw mills, Paper and Pulp

### 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 CO<sub>2</sub>

- Biodegradable garden and park waste
- Food and kitchen waste from households, restaurants, caterers and retail premises
- Waste water and sludge
- CO<sub>2</sub>



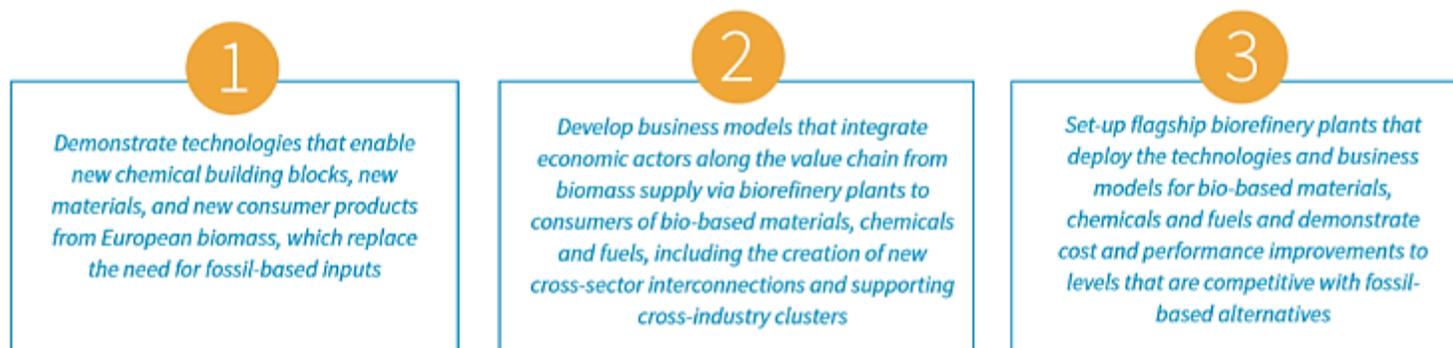
## Bio-based products & markets

- 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

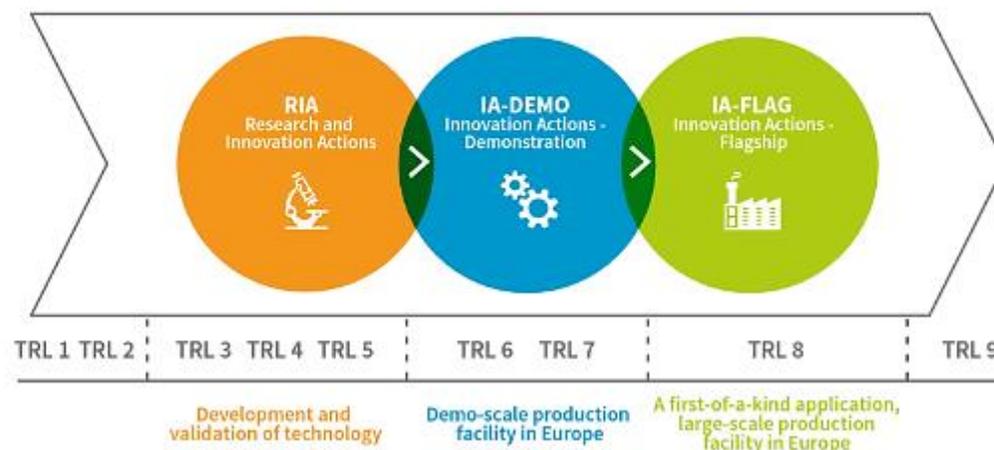


# BBI: Objectives & actions

BBI JU's objectives are to contribute to a more resource-efficient and sustainable low-carbon economy and to increasing economic growth and employment, in particular in rural areas, by developing sustainable and competitive bio-based industries in Europe. These objectives will be based on advanced biorefineries that source their biomass sustainably, and in particular to:



## BBI JU Actions

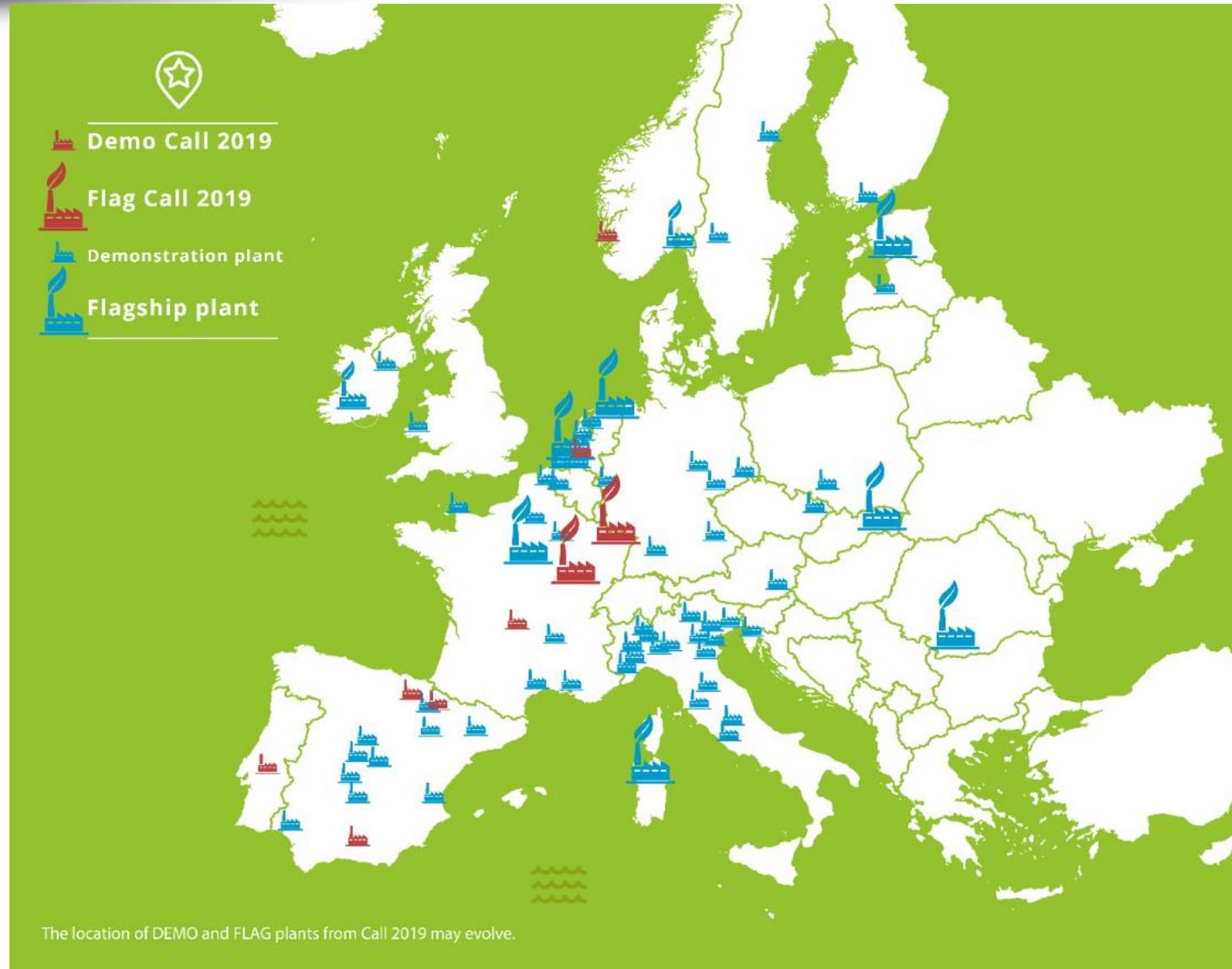


# Impact of BBI JU (2014-today)

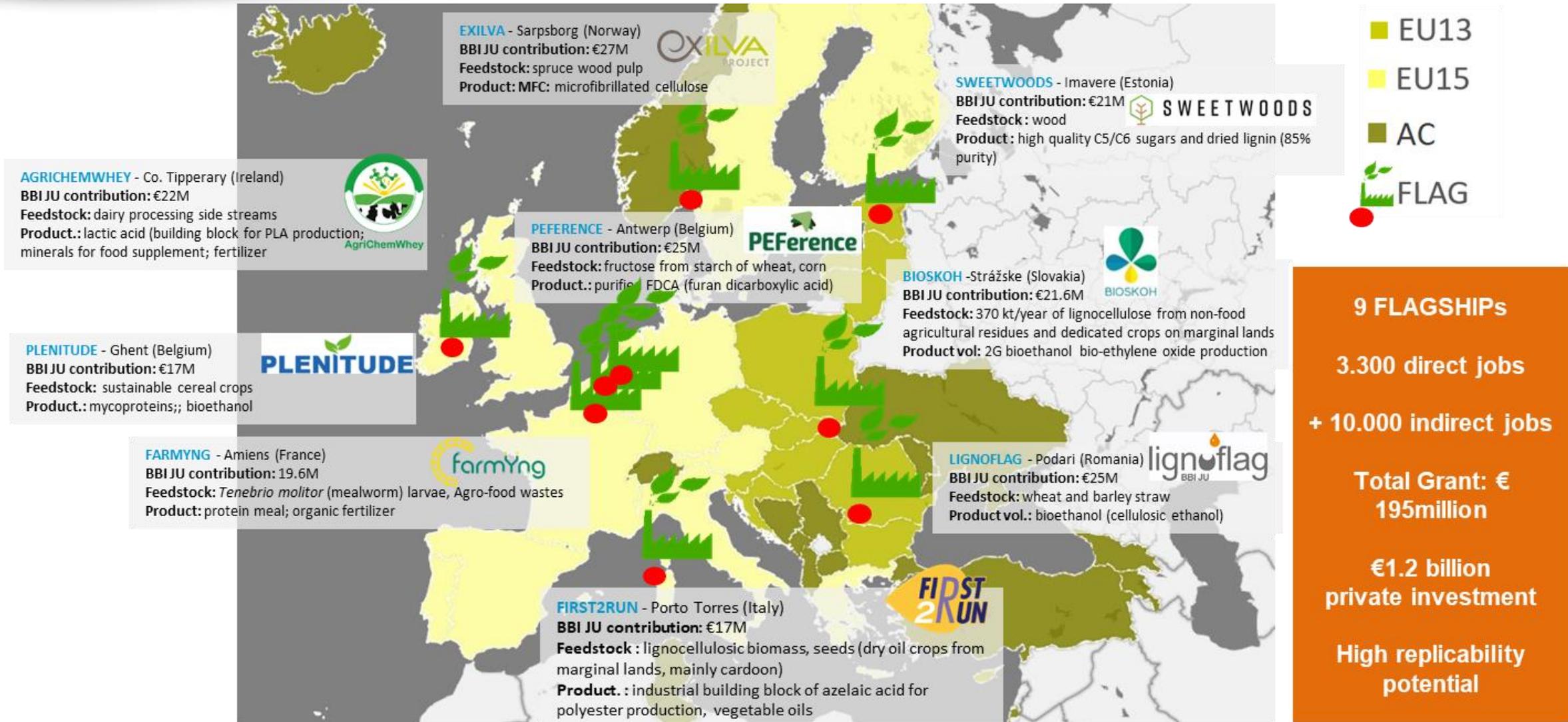
- **Mobilisation of private investment in Europe:** keeping knowledge and innovation, and investments in innovative production processes in Europe. Attract companies from outside EU to invest in innovation in Europe!
- **Development of new innovative value chains:** e.g. food industry collaborating with the chemical industry, the forestry and pulp & paper sector collaborating with chemical and textile industry, etc.
- **New industrial sectors are joining** e.g. by creating value from waste and side streams (food processing sector, aquatic/marine sectors, bio-waste, ...). As a result we also observe a **wider geographical spread** throughout Europe.
- **Linking the industry to policies and initiatives** such as the Circular Economy Package, Green Deal and COP21.
- **Increased market focus:** participation of brand owners is key as they help to develop new applications and create new markets. Their involvement also shortens time to market for innovative bio-based products.
- **Growing involvement of the regions:** BIC and BBI JU have strengthened their collaboration with the EU regions to exchange information and explore synergies and opportunities for joint financing, and deployment of new local value chains.

# Geographical coverage of DEMOs and FLAGs

2014-2019



# BBI JU – 9 Flagships from calls 2014-18





# Conclusions

# Conclusions

- The bioeconomy / biobased economy is already an important economic activity in Europe (turnover & employment), and is still growing
- Several policies and initiatives support the development of a sustainable, circular biobased economy in Europe (bioeconomy strategy, circular economy action plan, Green Recovery & Green Deal, public-private partnership, ...)
- The impact of the current BBI JU is clear and visible (new value chains, additional investments, new applications, new collaborations between industrial sectors, ...)
- We are setting up a new PPP, with more focus on circularity and SDGs

Thank you!

