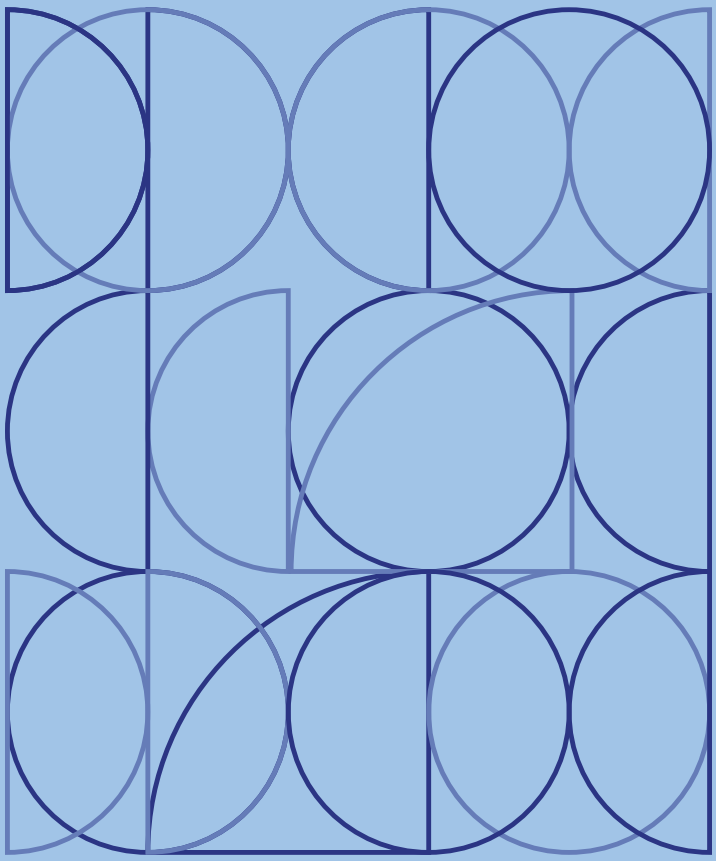
Circular Bio-based Europe Joint Undertaking



A COMPETITIVE BIOECONOMY FOR A SUSTAINABLE FUTURE

UNLOCKING THE FUTURE OF THE CIRCULAR BIOECONOMY IN EUROPE

Climate change is an existential risk and reliance on fossil resources is no longer an option. Simultaneously, the European economy struggles with industrial competitiveness in the global panorama. How can Europe transition to a low-carbon economy while ensuring strategic autonomy and economic growth?

A sustainable and circular bioeconomy contributes to addressing these challenges. Biomass and leftovers of other production processes all offer the potential for conversion into chemicals, materials, food and feed ingredients and other bio-based products. Thanks to the bioeconomy, these renewable biological resources, along with waste from households and industrial processes, replace the existing non-renewable sources of raw materials for a wide range of sectors.

View of the FARMYNG project biorefinery near Amiens, France.

WHY ARE BIO-BASED INDUSTRIES ESSENTIAL?

Circular bio-based industries produce sustainable bio-based materials, products and ingredients from renewable resources, coming from agriculture, the food industry, wood sidestreams, aquatic biomass and organic waste. This is an essential development for a sustainable future and a key element in addressing the world's current environmental and socio-economic challenges.

There are multiple benefits to establishing a viable bioeconomy in Europe:

- Reduce dependence on non-renewable, unsustainable fossil fuels
- Decrease our reliance on strategic imports such as proteins and establish local supply chains
- Increase competitiveness and create new jobs in Europe
- Manage natural resources sustainably
- Bring a positive impact on the environment
- Support the modernisation and strengthening of the EU industrial base against global competition

The circular nature of the bioeconomy presents a wide range of environmental, social and economic benefits.

A bioeconomy-based system allows for minimal waste and CO_2 production, thus contributing to the EU's sustainable growth targets and policies such as the Clean Industrial Deal and the EU Competitiveness Compass. Investments in the bioeconomy also create new jobs and opportunities in remote rural and coastal areas suffering from economic emigration.

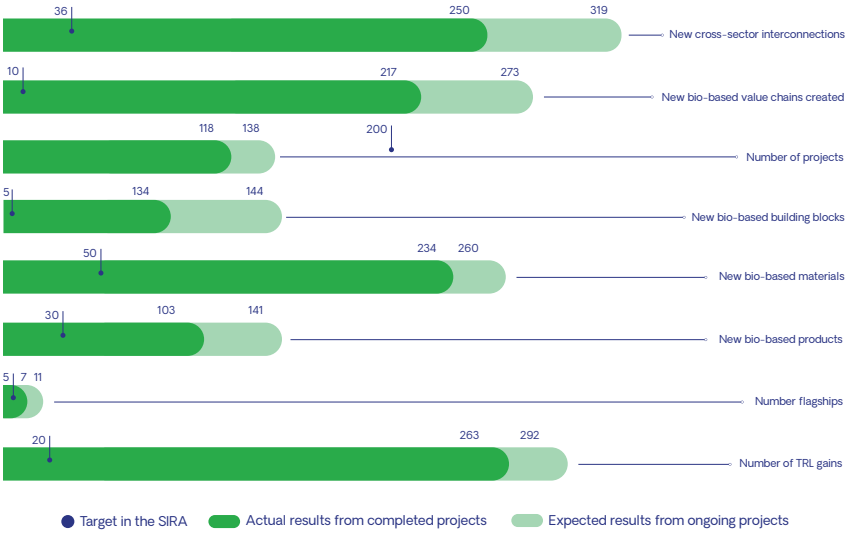
WHAT IS CBE JU?

The Circular Bio-based Europe Joint Undertaking (CBE JU) is a public-private partnership that funds projects deploying competitive, sustainable and circular bio-based solutions in Europe. By combining public funding with private investments, CBE JU manages to simultaneously reduce the risk of investing in cutting-edge technologies while adding the skills and knowledge necessary to fulfil market demands.

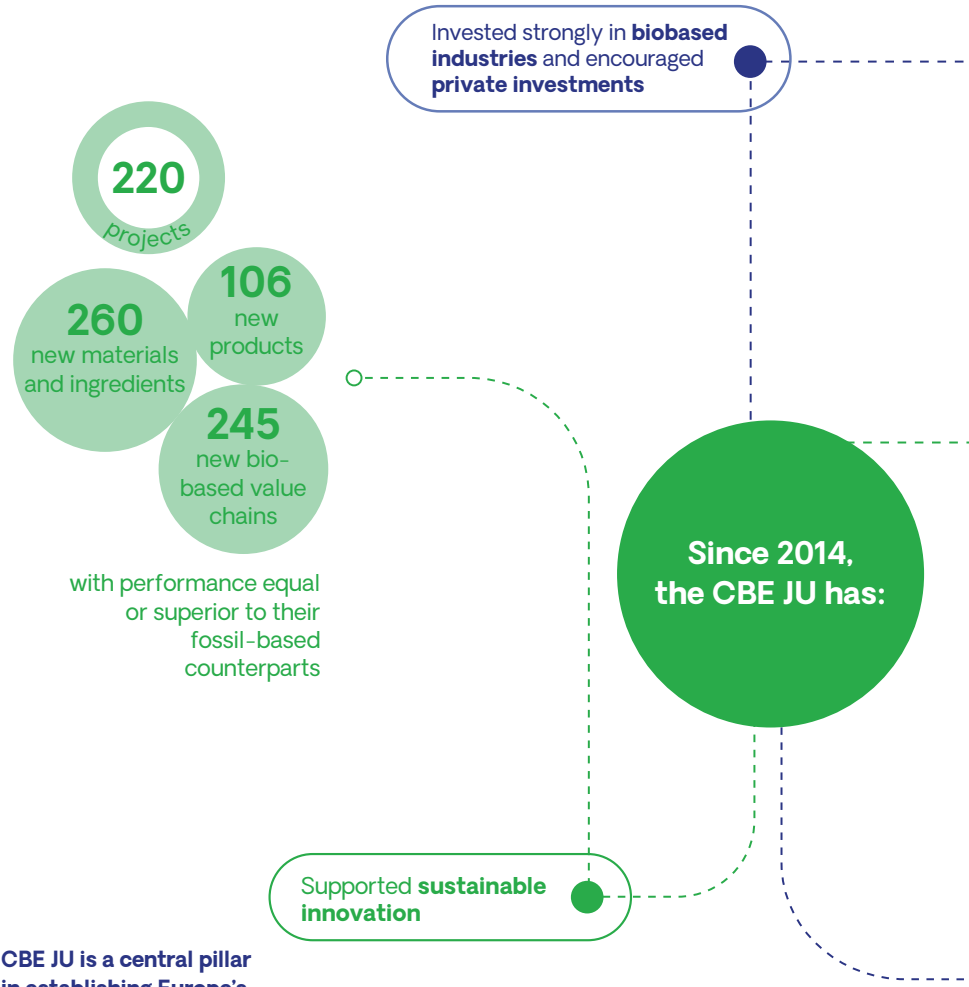
CBE JU builds on the success of its predecessor, the Bio-based Industries Joint Undertaking (BBI JU), which helped position Europe as the world's bioeconomy leader. Continuing that legacy, CBE JU's goal is to help Europe become the world's first climate-neutral continent while increasing EU's economic leadership, strategic autonomy and resilience.

BBI JU KPIs: results vs SIRA targets

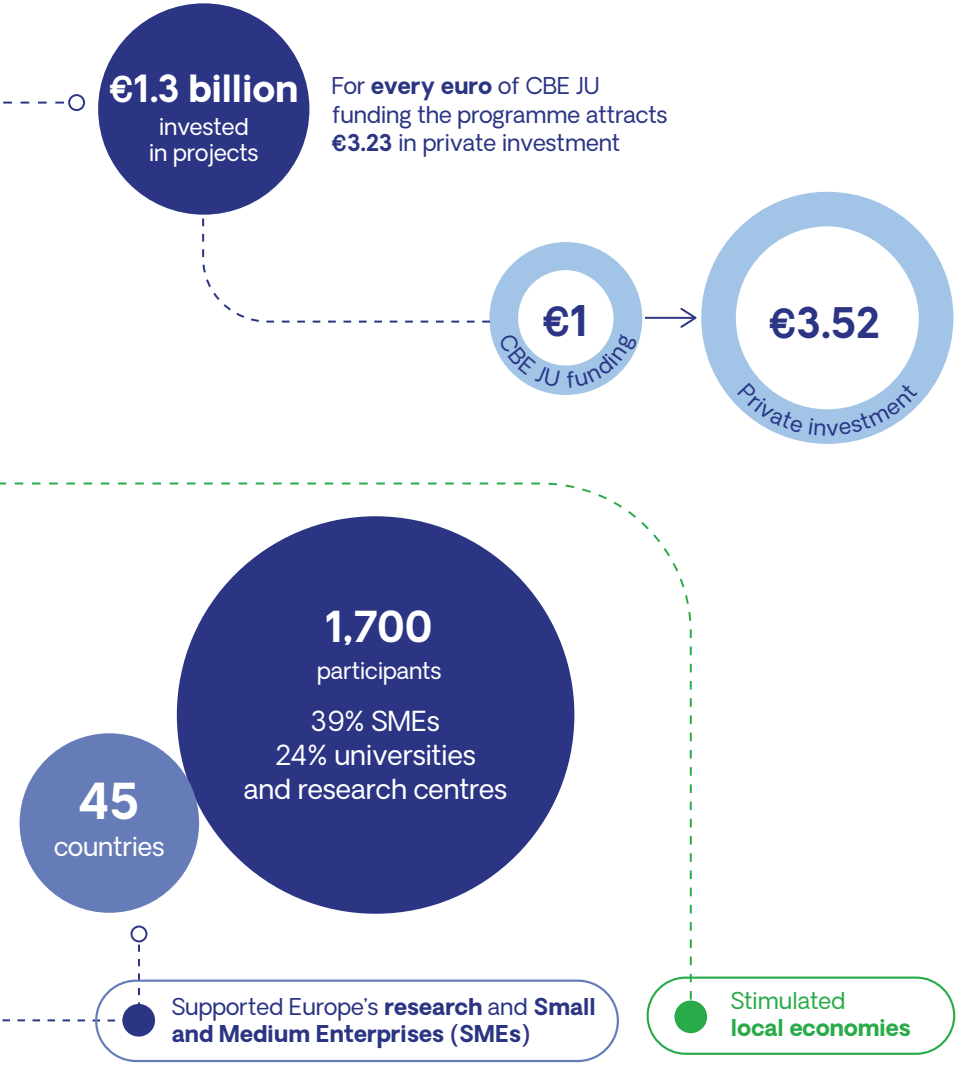
Now that the BBI JU funded projects are ending, the success of the initiative is shown by the achieved and often surpassed Key Performance Indicators defined in its Strategic Research and Innovation Agenda (SIRA).



CBE JU-FUNDED PROJECTS IN NUMBERS

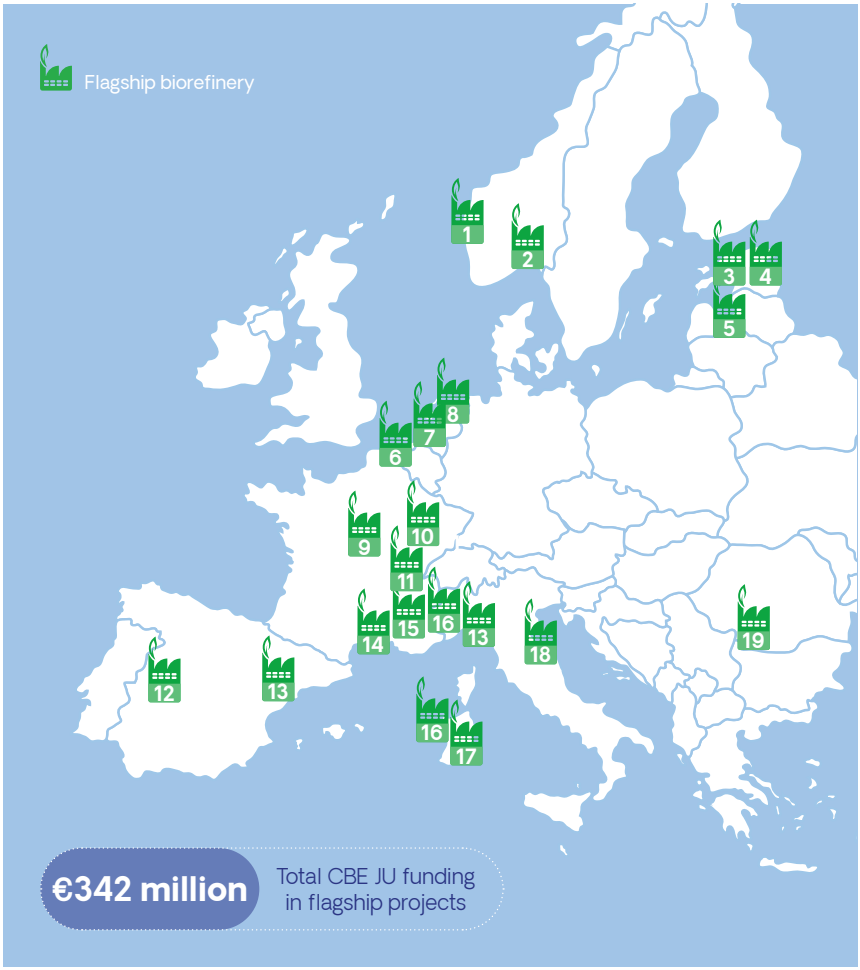


CBE JU is a central pillar in establishing Europe's bio-based sector as a global leader


€1.3 billion
invested
in projects
For every euro of CBE JU
funding the programme attracts
€3.23 in private investment
€1
CBE JU funding
€3.52
Private investment
1,700
participants
39% SMEs
24% universities
and research centres
45
countries
Supported Europe's research and Small and Medium Enterprises (SMEs)
Stimulated
local economies

WHAT ARE THE CBE JU'S FLAGSHIP PROJECTS?

The flagship projects – first-of-their-kind large-scale production facilities in Europe - provide support for designing and constructing novel, industrial scale biorefineries. The goal is to deliver technically mature industrial facilities that are ready for operations by the completion of the project. Flagship projects seek to demonstrate the viability of processes for the production of materials with improved environmental and economic performance compared to existing fossil-based competitors.



Project's feedstock & final product

6 PLENITUDE
Residues of cereal crops
↳ **Mycoproteins**

7 CIRCLE
Food waste
↳ **Lactic acid & polylactic acid**

8 PEFerence
Crop residues
↳ **FDCA for bio-based materials**

9 FARMŸNG
Mealworms & agri-food sidestreams
↳ **Proteins for animal feed & organic fertiliser**

10 AFTERBIOCHEM
Sidestreams from sugar beet
↳ **Flavourings, fragrances, hygiene products, pharmaceuticals, antimicrobials & polymers**

11 CERISEA
Fructose from non-food sidestreams
↳ **5-HMF for biopolymers, crop science, resins, and plasticisers**

12 SUSTAINEXT
Crops & agro-industrial sidestreams
↳ **Ingredients for food, feed, cosmetics & fertilisers**

16 Runfaster4EU
Vegetable oil and residual biomass
↳ **Bio-based cosmetics, feed ingredients, herbicides, bioplastics, and building blocks**

17 FIRST2RUN
Underutilised oil crops
↳ **Building blocks for polyester production**

18 TERRIFIC
Waste from agriculture and food industry
↳ **Bio-based packaging**

19 LIGNOFLAG
Crop residues
↳ **2G bioethanol biofuel-building block**

1 PROTEUS
Brown algae
↳ **Bio-based ingredients for food, feed, personal care products & industrial applications**

14 SCALE
Microalgae
↳ **Nutritional ingredients for food, feed & cosmetics**

2 EXILVA
Cellulose
↳ **MFC - MicroFibrillated Cellulose**

3 SWEETWOODS
Lignin & hardwood residues
↳ **High-quality C5/C6 sugars & dried lignin**

4 WOODCELL
Locally sourced wood waste
↳ **MCC - Microcrystalline Cellulose**

5 VIOBOND
Forest-based
↳ **Bio-based resins**

15 SYLPLANT
Agri-based & wood based
↳ **Alternative protein sources for food & feed ingredients**

13 CIRCULAR BIOCARBON
Municipal solid waste
↳ **High-value products from fertilisers to 5G technology**

AFTER BIOCHEM

Project: **AFTERBIOCHEM**
Biorefinery location: **Saint-Avold, France**
CBE JU funding: **€20 million**
Coordinator: **AFYREN NEOXY, France**

The EU is the world's largest producer of sugar beet. The sector currently supports 140,000 sugar beet growers and around 27,000 direct jobs in sugar beet processing. The AFTERBIOCHEM project has built the first biorefinery for transforming the sugar industry's sidestreams – mainly pulp and non-food waste – into bio-based molecules of industrial interest for the flavourings, fragrances, hygiene products, pharmaceuticals, antimicrobials and polymers sectors. This will increase the economic and environmental sustainability of the sugar beet industry.

cerisea

Project: **CERISEA**
Biorefinery location: **Péage de Roussillon, France**
CBE JU funding: **€20 million**
Coordinator: **Michelin Engineered Polymers, Clermont-Ferrand, France**

Fructose from food sidestreams is often underused in sustainable industry. The CERISEA project is pioneering the first industrial-scale process to produce 5-HMF, a key bio-based chemical, from fructose and non-food sidestreams. 5-HMF offers a sustainable alternative to petrochemical building blocks, with applications in biopolymers, crop science, resins and plasticisers. By improving waste use and product stability, CERISEA enhances resource efficiency, adds value to low-grade feedstocks and supports European resilience alongside initiatives like the CBE JU-funded PEFerence project.

CIRCLE FLAGSHIP

Project: **CIRCLE**
Biorefinery location: **Amersfoort, The Netherlands**
CBE JU funding: **€17 million**
Coordinator: **TripleW, Israel**

The chemical industry in Europe is a crucial driver of the economy; however, it faces several challenges, such as high greenhouse gas emissions, energy costs and dependence on imported fossil sources. The CIRCLE project is working on an innovative biorefinery that will transform locally sourced food waste and other biological residues into valuable bio-based chemicals like lactic acid to be used in cosmetics, cleaning products, the automotive industry and the food packaging sector. The project aims to retrofit an existing biogas plant to demonstrate the wide application of these products on the market and demonstrate the replication potential.

CIRCULAR BIOCARBON

Project: **CIRCULAR BIOCARBON**
Biorefineries location: **Zaragoza, Spain & Sesto San Giovanni, Italy**
CBE JU funding: **€15 million**
Coordinator: **Urbaser, Spain**

Despite major advances in waste recycling in recent decades, the organic fraction of municipal solid waste and sewage sludge are still not recovered efficiently. The CIRCULAR BIOCARBON flagship project is building two first-of-their-kind biorefineries converting this type of waste into four value-added products and a range of other intermediate products. The project's goal is to open new business frameworks based on an innovative circular approach to urban waste treatment. By doing so, the organic waste that currently goes to landfill and incineration will be reduced. It will also cut greenhouse gas emissions, notably methane and carbon dioxide.

Project: **EXILVA**
Biorefinery location: **Sarpsborg, Norway**
CBE JU funding: **€27.4 million**
Coordinator: **Borregaard AS, Norway**

Why do we need to use fossil-based materials to absorb water when trees give us the most advanced water absorption technology? The EXILVA project was conceived to substitute fossil-based chemicals in personal care, coatings and adhesives with advanced bio-based innovations. By using forestry sidestreams, the EXILVA biorefinery enabled a significantly lower carbon footprint compared to existing technologies. This project was among the first to receive the joint undertaking's support.

Project: **FARMŸNG**
Biorefinery location: **Poulainville, France**
CBE JU funding: **€19.6 million**
Coordinator: **ŸNSECT, France**

Alternative plant-based and sustainable proteins are needed for a growing global population. At the same time, two-thirds of Europe's protein needs are imported. FARMŸNG produces sustainable proteins with low environmental impact for animal feed by growing worms in the largest vertical farm in the world. On top of the outstanding environmental performance, producing alternative proteins in the EU will help reduce our dependence on protein imports and create local supply chains. The project's appeal has supported the French start-up leading the project, ŸNSECT, to scale up their technology and demonstrate the feasibility at industrial scale.

Project: **FIRST2RUN**
Biorefinery location: **Porto Torres, Italy**
CBE JU funding: **€17 million**
Coordinator: **Novamont SPA, Italy**

In Europe, many lands are not suited for agriculture due to their topography or past uses. However, these marginal lands could be leveraged to produce renewable resources for bio-based material production. The FIRST2RUN project involved local farmers to grow cardoons, an underutilised oil crop, in the Mediterranean landscape of Sardinia to make biodegradable and compostable products for fruit and vegetables for the consumer market. This project was among the first to receive the joint undertaking's support.

Project: **LIGNOFLAG**
Biorefinery location: **Podari, Romania**
CBE JU funding: **€24.7 million**
Coordinator: **Clariant Produkte GmbH, Germany**

Straw is a common leftover generated by agriculture. The LIGNOFLAG project developed technologies to produce bio-based ethanol from non-food resources like straw. The carbon footprint of such bioethanol production is much lower than that of fossil fuels, representing greenhouse gas savings that could reach up to 95%. In addition, the liquid by-product can be applied as a fertiliser for the crops used in the process.

PEFerence
The Renewable Innovation

Project: **PEFerence**
Biorefinery location: **Delfzijl, the Netherlands**
CBE JU funding: **€25 million**
Coordinator: **Avantium Chemicals BV, the Netherlands**

Modern human societies need plastic for a wide range of applications. At the same time, plastics are polluting the environment at an alarming level. The PEFerence flagship project has built the first industrial-scale biorefinery producing FDCA, a bio-based chemical, to make high-value packaging products. The goal is to replace a significant share of fossil-based plastics with 100% bio-based polyesters. These can compete with traditional packaging products in price and performance when produced at scale. In addition, the resulting bio-based material is sustainable and completely recyclable.

PLENITUDE

Project: **PLENITUDE**
Biorefinery location: **Sas van Gent, the Netherlands**
CBE JU funding: **€17 million**
Coordinator: **3F BIO Ltd, United Kingdom**

Europe needs to increase alternative sources of homegrown sustainable proteins. The PLENITUDE project aimed to produce affordable plant-based proteins for human consumption. When running at total capacity, the production of the mycoproteins will cut CO_2 emissions by 5 million tonnes a year compared with the production of meat proteins. The process consumes significantly less water compared to beef farming and uses agriculture waste as the main resource.

PROTEUS

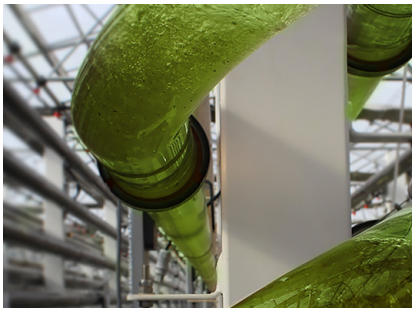
Project: **PROTEUS**
Biorefinery location: **Avaldsnes, Norway**
CBE JU funding: **€9.6 million**
Coordinator: **Alginor, Norway**

Brown algae, particularly Laminaria hyperborea, offer an abundant source of renewable resources in Europe, yet current harvesting methods limit their use. PROTEUS seeks to unlock the full potential of this type of seaweed by optimising its harvesting and extraction techniques. The project's biorefinery will transform 100% of the biomass into bio-based food and feed ingredients, personal care and other consumer products. This approach aims to sustainably boost Europe's blue economy by improving circularity and creating new business opportunities.

RUNFASTER4EU

Project: **RUNFASTER4EU**
Biorefinery location: **Porto Torres & Crescentino, Italy**
CBE JU funding: **€19.9 million**
Coordinator: **Versalis Spa, San Donato Milanese Mi, Italy**

Vast areas of marginal land in Europe remain underused, contributing neither to agriculture nor environmental regeneration. RUNFASTER4EU transforms these underutilised lands into productive sources of biomass for bio-based industries. Using advanced biorefinery processes, the project converts vegetable oils into high-value bio-based products, ranging from building blocks and intermediates to cosmetics, bioplastics, feed ingredients, herbicides, and bio-based, non-toxic polyurethanes in materials for vertical gardens. Scalable and replicable, the project shows how regional bio-based value chains can support Europe's bioeconomy transition with both economic and environmental gains.



Project: **SCALE**
Biorefinery location: **Baillargues, France**
CBE JU funding: **€14.3 million**
Coordinator: **Microphyt, France**

What if we could grow renewable resources in very reduced space to free land for agriculture and forestry? What if we could even capture CO_2 from the atmosphere to feed this resource? The SCALE project has built the first fully integrated microalgae biorefinery to produce natural active ingredients of high nutritional value for the food supplements, feed, and cosmetics sectors. Led by a French small enterprise, Microphyt, this project helps to reduce the dependency on fossil-based resources, replacing them with bio-based alternatives.

Project: **SUSTAINEXT**
Biorefinery location: **Hervás, Spain**
CBE JU funding: **€14 million**
Coordinator: **Natac Biotech, Spain**

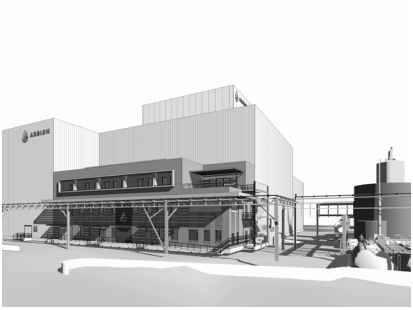
How to put in practice a zero-waste and circular-by-design industrial process in a rural region in Europe? SUSTAINEXT is up to the challenge in Extremadura, Spain. The project is turning an existing production plant into a digitalised circular biorefinery to produce healthy plant-based ingredients from local medicinal and aromatic plants and agricultural sidestreams. This will generate value and new jobs for the region boosting the local economy. The project's model is easily adaptable and replicable and can run on renewable energy produced by solar panels.

SWEETWOODS

Project: **SWEETWOODS**
Biorefinery location: **Imavere, Estonia**
CBE JU funding: **€21 million**
Coordinator: **Fibenol OU, Estonia**

Lubricants, adhesives and plastics are extremely useful materials, but when they are made of fossil-based raw materials, they contribute to global warming and pollution. SWEETWOODS has built a first-of-its-kind, highly efficient, reduced environmental impact industrial biorefinery to obtain high-value compounds using hardwood residues as a raw material. The biorefinery is part of a new industry that advanced an innovation hub in Estonia focused on forestry-based chemicals and materials.

SylPlant



Project: **SYLPLANT**
Biorefinery location: **Roussillon, France**
CBE JU funding: **€14 million**
Coordinator: **Arbiom, France**

How can we meet the challenge of feeding sustainably a growing population while also reducing Europe's large protein imports? The SYLPLANT project is building an industrial biorefinery to produce protein-rich ingredients for food and feed markets from underutilised resources, like agricultural and forestry residues. The project is continuing the success of the SYLFEED demonstration project.

TERRIFIC
BIOBASED FLAGSHIP PACKAGING SOLUTIONS

Project: **TERRIFIC**
Biorefinery location: **Bottrighe, Italy**
CBE JU funding: **€16.8 million**
Coordinator: **Novamont, Italy**

The goal of the TERRIFIC project is to support the decarbonisation of the packaging sector and make it circular with bio-based materials for recyclable, compostable and high performing packaging. The project will build a first-of-its-kind biorefinery to produce bio-based and biodegradable film laminated on pulp or paper, as well as rigid and flexible thermoplastic bio-based materials for packaging solutions.

VIOBOND

Project: **VIOBOND**
Biorefinery location: **Riga, Latvia**
CBE JU funding: **€15.9 million**
Coordinator: **Latvijas Finieris A/S, Latvia**

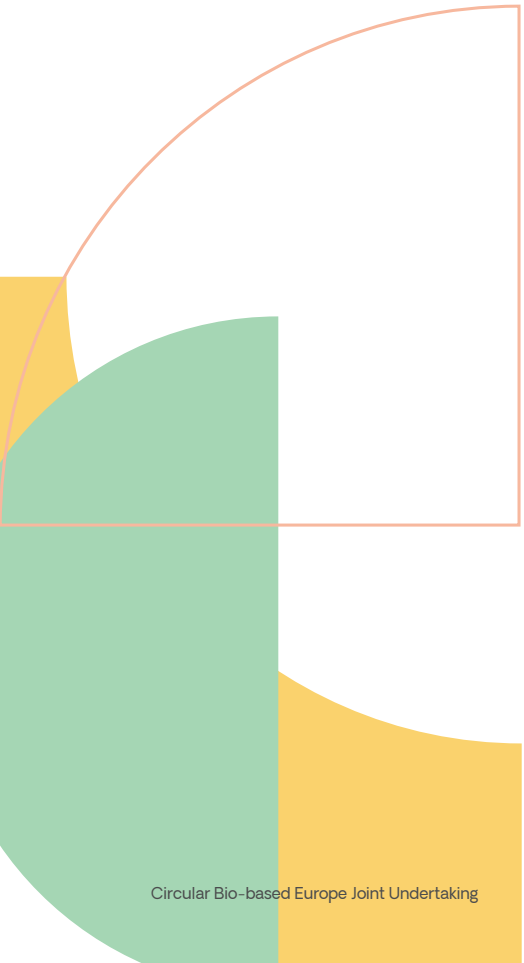
Wood panels require glues whose components - phenol and formaldehyde - may pose risks to human health. By transforming hardwood residues, the VIOBOND project demonstrates the feasibility of an effective and efficient business model for lignin transformation into harmless and sustainable bio-based resins for wood panels and construction materials. This technology has high market potential, as the current sales of phenolic resins in Europe are around €1 billion and will be directly embedded in the productions facility at Latvijas Finieris in Riga.

Project: **WOODCELL**
Biorefinery location: **Imavere, Estonia**
CBE JU funding: **€17 million**
Coordinator: **Fibenol, Estonia**

Bio-based materials, like lignin and wood sugars, offer a sustainable alternative to fossil-based materials. WOODCELL aims to produce micro-scale microcrystalline cellulose (MCC) from hardwood residues by building on the successful SWEETWOODS production. The project will promote industrial competitiveness, reduce dependency on imports by using wood residues as feedstock, and offer a wider range of bio-based applications for the chemical and materials industry. Additionally, it aims to improve the environmental sustainability of the production process and create new job opportunities in the region.

WHAT IS THE REAL ECONOMIC AND SOCIAL IMPACT OF THESE PROJECTS IN EUROPE?

Currently, the EU's bioeconomy has a turnover of € 2.35 trillion and employs nearly 17.2 million people.



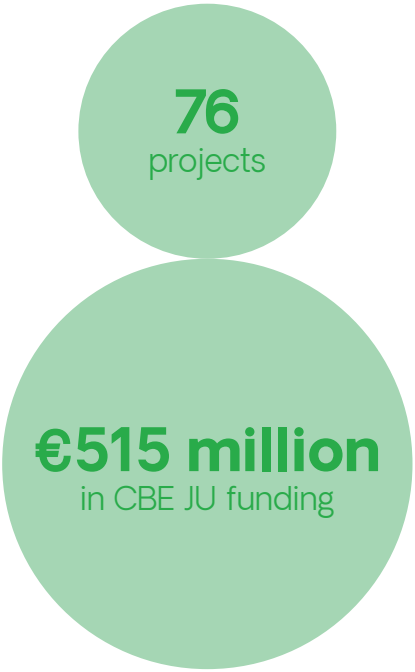
The bio-based economy has also **encouraged investments.** Many of these are new, highly skilled jobs in remote, rural and coastal areas, where many resources and biomass are located. Moreover, the **bio-based sector creates alternative income sources** and sustainable production opportunities for the primary producers in the agriculture, aquatic and forestry sectors. The development of bio-based industries can contribute to the socio-economic revitalisation of European regions suffering from youth outmigration in search of better employment prospects.

Moving forward, the CBE JU-funded flagship projects are boosting the tangible impact of these green sectors, as the funded first-of-their-kind biorefineries are built across Europe. The industrial-scale biorefineries demonstrated a **high replicability potential** in other regions and countries.

DEMONSTRATION ACTIONS

These actions are designed to demonstrate the technical and financial feasibility of new or improved bio-based processes.

By the end of their activities, these projects are expected to reach TRLs (Technology Readiness Levels) 6 or 7 and allow validation of the business model and products at pre-industrial scale.



DEEP PURPLE

The DEEP PURPLE project addressed the EU's urban organic waste challenge - 140 million tonnes annually, most of it landfilled or incinerated - by developing a breakthrough biorefinery system. This approach converts mixed waste streams, including municipal solid waste and sewage sludge, into valuable bio-based materials for sectors like packaging, construction, cosmetics and agriculture.

The project successfully operated demonstration photobioreactors, achieved high-purity bioproducts such as PHA and bio-based polyesters, created 'self-healing' additive for concrete, and produced organic fertiliser tested on farms in France, Italy and Spain.

DEEP PURPLE also significantly improved the treatment of municipal organic waste by increasing hydrolysis efficiency, lowered production costs and enhanced recycling rates for sludge. The project fostered new partnerships across industries, creating value chains linking waste management with packaging, construction, fertiliser, and cosmetics sectors. **Overall, it reduced landfilled organic waste by up to 76%, outperforming existing technologies.**

Rural BioReFarmeries

The Rural BioReFarmeries project is developing Europe's first small-scale, decentralised green biorefinery model to help grassland farmers turn green biomass into valuable products like feed, fertilisers, energy and high-value ingredients. Aimed at boosting rural resilience and sustainability, the project brings together farmers, industries and researchers to demonstrate a farmer-focused bioeconomy. **It enhances biorefinery standards, tests fair business models, and uses smart logistics tools to improve efficiency and economic returns.** By promoting local value creation and lower emissions, the initiative seeks to replicate its model across Europe's grassland regions and provide scalable, sustainable solutions for rural communities.

ZEST

The ZEST project addresses the growing global demand for sustainable protein by developing an innovative system to produce fungi-based proteins using low-cost agricultural waste streams. By optimising fermentation processes and designing flexible, automated bioreactors, **ZEST aims to produce a range of bio-based products, including protein-rich food and feed, cosmetic ingredients and biomaterials.** The project will identify suitable fungal species, implement AI tools to optimise production conditions, and use cascading approaches to minimise waste. ZEST also evaluates the full value chain to ensure environmental, economic and social sustainability. Through safety assessments, social engagement, and a strong focus on market uptake, the project aims to increase the acceptance and scalability of fungi-based proteins across Europe.

RESEARCH AND INNOVATION ACTIONS

Research and innovation actions fund the development and testing of new technologies and solutions to fill the gaps in existing bio-based value chains.

100
projects

€384 million
in CBE JU funding

GoodByO

The GoodByO project is developing a next generation biorefinery that transforms food waste, biogenic CO_2 and industrial wastewater into cost-efficient, sustainable bio-based products. It uses gaseous and liquid by-products as zero-cost feedstocks to produce bio-octanoic acid, bio-hexanol, carotenoids, microbial proteins, and organic fertilisers. By leveraging microbial diversity and waste-based processes, GoodByO offers a circular solution to reduce emissions in Europe's manufacturing sector.

The project also integrates a renewable energy system using biomethanation to balance the biorefinery's energy demands. Long-term trials with real feedstocks will ensure the stability and scalability of its technologies.

Ultimately, GoodByO aims to support the EU's transition to a more circular and climate-resilient economy by delivering a roadmap for commercialisation. Through its innovative integration of waste valorisation, biotechnology and renewable energy, the project not only advances biomanufacturing practices but also strengthens the EU's leadership in sustainable industrial innovation.

pHYBI

The pHYBi project addresses a challenge in Europe's bioeconomy: how to produce sustainable biomass without competing with food crops. It focuses on cultivating industrial crops on degraded, polluted and saline soils or land that is unsuitable for food production.

By combining soil phytoremediation with biomass valorisation, **pHYBi promotes a circular economy model that supplies high-value raw materials for industries like textiles.**

The project tests woody and herbaceous crops in contaminated soils, enhancing their growth using fungi, bacteria and custom-made soil additives. It also aims to restore ecosystems while improving soil health through phytomanagement practices. **pHYBi develops processes to extract and valorise lignocellulosic biomass** (cellulose, hemicellulose, lignin), and supports market uptake through stakeholder engagement, social innovation and a virtual tool for replicating the approach across Europe. Ultimately, the project demonstrates how degraded land can become a sustainable feedstock source, contributing to a resilient and inclusive European bioeconomy.

COORDINATION AND SUPPORT ACTIONS

The long-term success of Europe's bio-based sector relies on bringing new, innovative solutions to the market and, once there, boosting their uptake and building market share. This is the role of the CBE JU-funded coordination and support actions, which address the cross-sectoral challenges of the bioeconomy including developing skills, identifying regulatory barriers and promoting user acceptance.

25
projects

€37.6 million
in CBE JU funding

COPILOT

The COPILOT project aims to boost Europe's bioeconomy by helping innovators move from lab research to large-scale production - one of the biggest hurdles due to high costs during the pilot phase. While the bioeconomy already employs 17.2 million people and generates over €2 trillion a year, many promising ideas struggle to scale, weakening Europe's global competitiveness.

To address this, COPILOT is creating a central, open-access platform that maps and connects bioeconomy infrastructures across Europe. This platform will make it easier and more affordable for innovators to find the right pilot and demo facilities, access training and connect with partners and investors. With a large and diverse consortium - from start-ups and corporations to public authorities and clusters - COPILOT aims to unify Europe's bioeconomy ecosystem.

The project will also support infrastructure operators financially and through networking, while offering training, matchmaking and scale-up support for innovators. Ultimately, **COPILOT seeks to establish a lasting, self-sustaining platform that strengthens collaboration, speeds up innovation and builds a thriving European bioeconomy.**

ENCOURAGING BUSINESSES DEVELOPMENT AND RESEARCHERS

CBE JU-funded projects offer opportunities for small and medium-sized enterprises (SMEs), industry, primary producers, trade associations and end users, to develop technologies and business models that can drive Europe's green economy while helping companies to scale up their own technologies and improve their market access.

CBE JU has **1700** participants

39% of these participants are SMEs

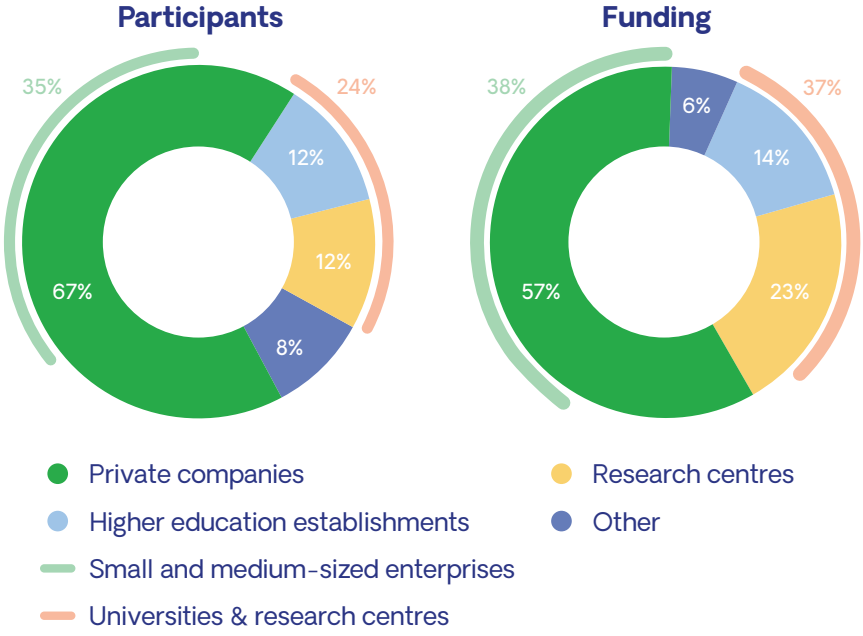
SMEs coordinate **17%** of all CBE JU-funded projects

SMEs receive **38%** of CBE JU funding

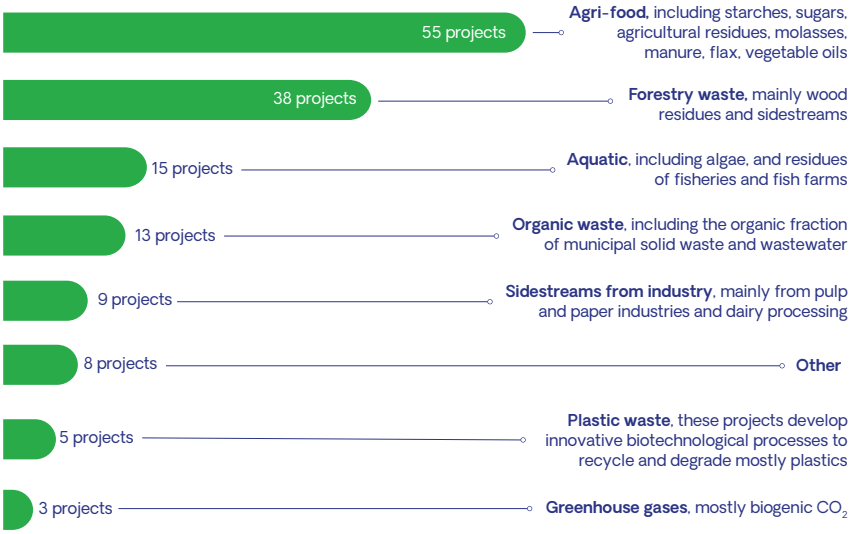
With a CBE JU funding share of one-third, industrial SMEs, including biotechnology ones, are important technology providers in CBE JU-funded projects.

Other small enterprises are involved in a variety of sectors, such as chemicals, food, feed, materials, engineering, construction, waste processing, recycling, plastics packaging, agriculture and aquaculture.

Accelerating the innovation process for bio-based solutions and fostering technology transfer are part of CBE JU's core objectives. Universities and research centres, representing one-quarter of all CBE JU participants and one-third of all funding, are key providers of innovative bio-based solutions for the projects.

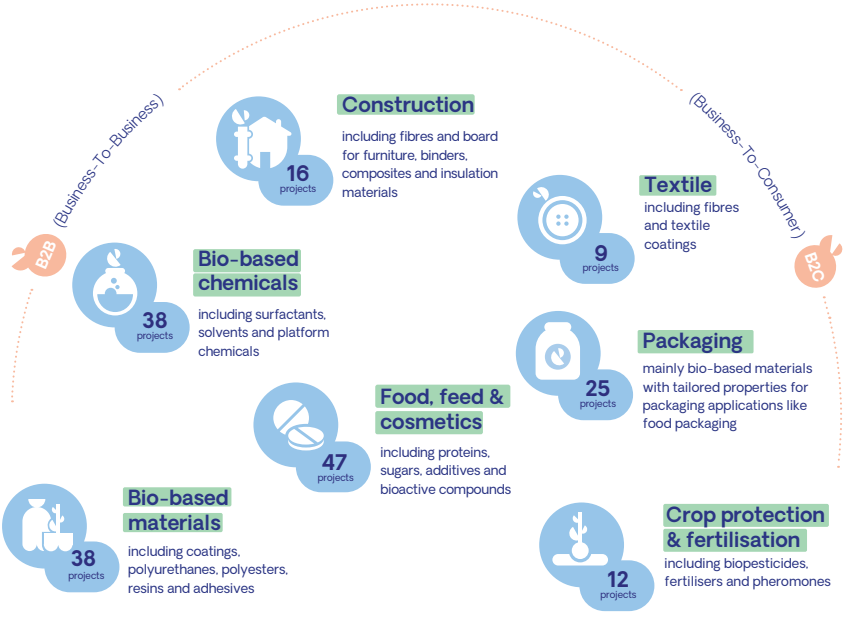


Main source of feedstock used in CBE JU projects



31 of projects use more than one source of feedstock.

Application areas of the bio-based products and solutions



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