

# Boosting innovation in European bioeconomy

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## New projects to drive innovation within the European bioeconomy being funded by the CBE JU are outlined here

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The Circular Bio-based Europe Joint Undertaking (CBE JU), a €2 billion public-private partnership advancing competitive circular bio-based industries in Europe, has signed its first 21 grant agreements this year.

Two hundred ninety-three beneficiaries from 27 countries will receive €116 million in funding to develop new bio-based products and materials, first-of-their-kind production facilities, and innovative processes.

The new projects will boost the competitiveness and increase the resilience of Europe's bio-based economy by using often-underutilised resources to produce consumer products and industrial solutions to replace fossil-based ones. This will reduce the EU's reliance on strategic imports and create new value chains, business opportunities, and green jobs, particularly in rural areas.

### Two new biorefineries for high-value products

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Two new flagship projects will set up innovative industrial biorefineries to support the development of the European bio-based economy, focusing on the food and feed sectors.

#### SUSTAINEXT

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SUSTAINEXT <sup>(1)</sup> will turn an existing production plant into a circular biorefinery that will produce healthy plant-based extracts for food, food supplements, animal feed, fertiliser, cosmetics, and chemicals. The biorefinery will create new jobs in Extremadura, a rural region of Spain, and bring value to waste from food industries.

The proposed industrial model boasts the integration of twelve value chains that span from primary producers to end-users. "The model is easily replicable, adaptable to feedstocks of varying types and quality and able to run on renewable energy", highlighted the Project Coordinator José María Pinilla. <sup>(1)</sup>

#### SYLPLANT

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SYLPLANT <sup>(2)</sup> will build a plant near Lyon, France, producing 10,000 tonnes of protein-rich food and feed ingredients annually. The project will contribute to replacing animal proteins and other high-carbon-footprint plant-based protein sources, such as soy, with novel high-quality ingredients deriving from agricultural and forestry residues, leading to healthier and more sustainable diets for animals and humans.

The project will develop several innovative, nutritious, sustainable food products, pet food, and fish farming feed prototypes containing the ingredient. The CBE JU- funded SYLPLANT project “will draw up a roadmap to build even larger plants, making the vision of creating food from underused local resources a reality,” said the Project Coordinator Marc Chevrel. <sup>(2)</sup>

## **Advancing green solutions for many bioeconomy sectors**

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CBE JU funding will also make possible the development of products and applications for a range of other sectors, including transport, construction, packaging, and textiles. Among the resources that will be used are agricultural residues, paper production side-streams and municipal solid waste, terrestrial and aquatic plants, and wood residues.

Actions range from cultivating biomass on marginal land to produce bio-based fibres and soil revitalisation to capturing CO<sub>2</sub> emissions from wastewater treatment plants and transforming them into high-performance plastics.

Some examples of the new projects include:

### **ROBOCOOP-EU and BRILIAN**

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ROBOCOOP-EU <sup>(3)</sup> and BRILIAN <sup>(4)</sup>, with €4.7 million and €4.8 million in funding, respectively, will tap into agricultural waste streams to develop new cooperative regional business models. This will offer new commercial opportunities in rural areas, leading to job creation and a more diverse bio-based product portfolio.

A university and a research centre lead the projects, integrating primary producers and commercial companies, to diversify farmers’ sources of income and reduce economic risks.

### **SynoProtein**

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SynoProtein<sup>(5)</sup> has been granted €5 million to formulate a sustainable process that will convert residue from sawmills into single-cell proteins for fish feed and produce biochar for animal feed while capturing CO<sub>2</sub>.

Suppose this ground-breaking circular system developed by a Danish small business is proven effective. In that case, it has the potential to recover 160,000 tonnes of forestry residue and produce 120,000 tonnes of fish and animal feed annually. This could be valued at €175 million if implemented on a large scale. <sup>(5)</sup>

### **REDYSIGN**

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REDYSIGN <sup>(6)</sup> will use €4.4 million of CBE JU funding to create wood-based fresh meat packaging containing sensors to prevent premature food spoilage and an efficient recycling process. The project consortium has established collaborations between organisations from technological companies to supermarket chains to develop a viable, bio-based, circular substitute for fresh meat packaging. <sup>(6)</sup>

## THERMOFIRE

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THERMOFIRE <sup>(7)</sup> has been awarded approximately €4.5 million to produce bio-based, flame-retardant materials for the automotive, aerospace and textile sectors using feedstocks such as cellulose and flax. The materials will be lighter and less expensive than their fossil-based counterparts while maintaining the performance levels required in demanding conditions.

In economic terms, the CBE JU-funded THERMOFIRE project aims to lower the cost of flame-retardant materials by shortening production times and increasing the market share of bio-based composites. <sup>(7)</sup>

Take a look at [all the new projects](#) and [discover how CBE JU funding is advancing a competitive European bioeconomy](#).

## Ground-breaking production at various scales

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The new CBE JU-funded projects are split into four actions, encompassing activities and tasks ranging from establishing ground-breaking production facilities to developing coordination and support systems.

- Two Flagship Innovation Actions will receive €28 million to build first-of-their-kind industrial-scale facilities.
- Eight Innovation Actions will obtain €41 million to establish demonstration-scale production systems and business models.
- Ten Research and Innovation Actions will receive €44 million to develop new materials, products and ingredients from renewable and biological resources.
- One Coordination and Support Action has been granted €2.9 million to develop digital monitoring tools to assess bio-based industrial systems' environmental and social impact.

## Innovation in European bioeconomy

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CBE JU Acting Executive Director Nicoló Giacomuzzi-Moore said: "I am confident that these new projects will make a vital contribution to advancing the bio-based sector in Europe and driving forward the transition to a sustainable, resource-efficient and circular bio-based economy.

I am also very pleased that, with these grant agreements, we can strengthen some European bioeconomy areas, such as producing bio-based alternative food and feed ingredients, flame-retardant materials, smart food packaging, and alternative bio-based platform chemicals.

Lastly, I would like to highlight the high SME participation in the CBE JU projects – around 40% of all participants – which confirms the important role of SMEs in driving innovation to the market in the bio-based sector."

## References

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1. <https://www.cbe.europa.eu/projects/sustainext>
2. <https://www.cbe.europa.eu/projects/sylplant>
3. <https://www.cbe.europa.eu/projects/robocoop-eu>
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