



European  
Bioeconomy  
Alliance

# The Bioeconomy Blueprint

Building a circular and resilient Europe

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## Building a circular and resilient Europe

Achieving the EU's vision for a more sustainable, resilient and competitive economy that places nature and people at its core requires actions across many sectors. **Europe's bioeconomy – which transforms renewable resources from agriculture, forests, seas, residues and waste, into food, feed, materials and energy** – is already contributing to this effort.

But it has the potential to do far more. **Shifting from fossil and non-renewable resources to renewable bio-based resources – without compromising biodiversity goals – is essential to building a climate-neutral, net-zero and circular economy.**

**This transition will require urgent, sustained commitment from EU policymakers to recognising the strategic importance of the Bioeconomy and the technologies that enable it – and to acting accordingly.**

The European Bioeconomy Alliance (EUBA) is a unique cross-sector alliance helping to lead the shift from a fossil-based to a circular society by raising awareness of the benefits of the bioeconomy with EU, national and regional leaders and stakeholders.

**As the European elections approach, EUBA members urge EU policymakers to take action to realise the full potential of the circular bioeconomy. On the following pages, we share our vision of how Europe's bioeconomy sector can help achieve the economic, social and environmental objectives of the European Green Deal and its Industrial Plan, and offer policy recommendations needed to make them happen.**



## The EU Bioeconomy

### Helping move Europe beyond fossil

**What is Bioeconomy? It's the sustainable production of renewable resources and their conversion into food, feed, fibres, materials, chemicals and energy.** Bioeconomy is an integral part of the EU's Green Deal and Circular Economy ambitions.

**But the Bioeconomy isn't just some idea still on the EU policy drawing board. It already delivers benefits across Europe,** contributing nearly €2.4 trillion annually to the EU economy and more than 17 million jobs to EU citizens. These benefits include:

- **Making efficient use of local resources:** Biorefineries use renewable resources such as agricultural and forestry biomass, production residues, by- and co- products and waste as their raw material.
- **Contributing to the productivity of the EU agri-food sector and food security:** The various uses of crops grown in the EU can be processed into various by-products and renewable energy. Land used for bio-products and biofuels does not compete with food production.
- **Contributing to a circular economy:** Land use as well as food security and sovereignty are optimised through sustainable and resource-efficient utilisation of Europe's renewable raw materials. Biorefineries serve food, feed, industrial and energy market outlets at the same time, valorizing all parts of the agricultural and forestry raw materials they process in near-zero waste plants.
- **Enabling circular pathways and providing solutions to environmental problems:** Biodegradable and compostable materials can improve the collection of bio-waste, enable the production of soil improvers (compost), divert bio-waste from incineration or landfilling, and present a solution to the pollution of the environment with persistent microplastic.
- **Boosting Europe's competitiveness:** Bioeconomy revitalises rural areas, providing growth and jobs with potential for more development in the coming decades. More than 17 million people are employed in bioeconomy sectors in the EU, creating more than €600 billion in added economic value, according to the European Commission. Europe's science base is excellent and thousands of companies in the EU are active and at the forefront of bio-based innovation.
- **Mitigating climate change:** The bioeconomy, by producing fossil-free renewable materials, energy and fuels, can help reduce greenhouse gas emissions (GHG) and remove CO<sub>2</sub> from the atmosphere. Using more biological resources and processing methods in a sustainable way could save up to 2.5 billion tonnes of CO<sub>2</sub>-equivalent per year in the EU by 2030.
- **Preserving biodiversity:** Further developing bio-economies can contribute to the enhancement of biodiversity while improving the provision of other ecosystem services. In the EU, biomass is produced according to standards that are among the highest in the world in terms of quality, safety and sustainability, which farmers, forest owners and their cooperatives are legally bound to respect.

# How does Bioeconomy work?

**Bioeconomy is no longer a niche part of the economy and has the potential to become mainstream. In the bioeconomy, renewable resources are converted into food, feed, bio-based products, and bioenergy via innovative, efficient technologies.**

**These technologies can be found in all kinds of products and sectors, including:**

- **Biotechnology:** Industrial biotechnology uses enzymes and microorganisms to make bio-based products from renewable raw materials in sectors such as chemicals, food and feed, detergents, paper and pulp, textiles, and bioenergy.
- **Oleochemicals:** Oleochemicals, replacing petrochemicals, provide fossil-free, renewable, functional solutions in coatings and plastics for the construction sector, the automotive industry, detergents and furniture production.
- **Oils:** The processing of oilseeds supplies oils, protein meals and co-products to food, feed, energy and other industrial uses. Vegetable oils are feedstock for the fully bio-based composites used, among others, in windmill blades and bridges.
- **Wood:** Wood and by-products of wood processing are traditionally used in construction, furniture, paper, packaging and energy and are increasingly used as raw material in other sectors such as chemicals, cosmetics, transportation fuels, pharmaceuticals, smart packaging, coatings, adhesives, plastics, composites and fabric fibres.
- **Starches:** Starches and plant-proteins are traditionally used in food, feed, paper, cardboard and textiles, and increasingly as raw materials in the construction, chemical, cosmetics, fermentation, packaging, plastics and detergent sectors. Examples in pharmaceuticals include toothpaste, tablets, emulsions, lotions, liquid medicines, and creams.
- **Sugars:** Sugar beet is a highly versatile crop that can be used to produce sugar for food and industrial use, animal feed, bioethanol, molasses, biogas, bioplastics, biochemicals and more.
- **Bioplastics:** New innovative processes for biobased plastics are being developed using agro-based and ligno-cellulosic feedstocks, including agricultural waste and residues, offering the potential for bioplastics to provide the agri-industry with a high-value outlet for part of their side-streams, transforming waste into a valuable resource. Biodegradable and compostable plastics support the separate collection of bio-waste and offer additional end-of-life solutions through organic recycling while also addressing the problem of persistent microplastics in the environment.
- **Bioenergy:** Biorefineries efficiently turn renewable raw materials, including agriculture and forestry residues, into non-fossil-based everyday products. These refineries produce renewable fuel as well as feed and food products, in turn preserving food and feed security and farmers' and forest owners' profitability. This means there is no trade-off by between climate change mitigation and food security.
- **Organic fertilizers:** Closed loop systems in which manure is processed and valorised (energy and/or fertiliser production) are already being developed in EU. Recovered nutrients from manure are generally already converted into organic fertiliser in most farms in EU as it reduces the need for mineral fertiliser usage which requires fossil energy to be produced.





## How Europe can unleash the potential of its Bioeconomy?

Realising the EU Bioeconomy's full potential – and thus helping achieve related goals for climate-change mitigation, energy security, innovation and strategic autonomy – requires a strong commitment from policymakers to:

- **Demonstrate the EU's commitment to the importance of the sector by assigning a 'bio-coordinator' at EU level, for example a European Commissioner for Bioeconomy, and reinforce that commitment in the relevant services and Commission Directorates-General.**
- **Boost research and innovation and commercialisation** related to the bioeconomy and ensure an appropriate level of funding for (scaling-up) the bioeconomy and enabling technologies and skills.
- **Create a long-term, consistent and supportive regulatory environment** for the bioeconomy sectors that gives bio-based products a competitive advantage over fossil-based products.
- **Recognise the central role of Europe's bioeconomy** in the transition to a more circular, renewable and resource-efficient society able to address climate and environmental challenges.
- **Make the circular bioeconomy a priority and an integral part of EU-level frameworks and policies**, for example by:
  - making the €100M Circular Bioeconomy Investment Platform (CBIP) a reality.
  - ensuring consistency across various taxonomy items in the action plan on financing sustainable growth: between Technical Screening Criteria recommended by the Sustainable Finance Platform, those provided for in the climate delegated act of the taxonomy regulation and the draft Delegated Act on circular economy.
  - recognising agricultural biomass as feedstock to produce bio-based plastics for packaging rather than excluding agricultural renewable raw materials and focusing solely on "bio-waste".
  - remaining consistent with similar TSCs in the climate delegated act of the taxonomy regulation adopted in 2022.

- **Make the bioeconomy a strategic sector, and create incentives for bio-based products in strategic sectors** and promote their visibility to stimulate market demand, for example by:

- introducing “Measures to promote the market introduction of innovative bio-based products” as highlighted in the Lead Market Initiative entitled “Taking Bio-based from Promise to Market”.
- implementing measures in the area of public procurement to raise awareness about the benefit of bio-based products among public procurers.
- increasing the visibility of standards in EU communication and legislation as per DG GROWS workplan on revising standards on biobased products including standard EN18027 (comparing biobased products with fossil-based products).
- creating a market for these bio-based products building on existing initiatives such as the USDA Biopreferred program or replicating initiatives such as the German-led EverythingBio project in other Member States.

- **Ensure a sufficient budget for the future CAP and Horizon Europe** to support farmers, forest owners and their cooperatives to invest and innovate in the development of the bioeconomy as well as further research projects and to have access to training, advisory services and skills adapted to their needs. Ensure that CAP objective on bioeconomy is adequately considered in national plans of EU Members States.

- **Continue and extend the public-private partnership** as Circular bio-based Europe under the 10th EU R&D Framework programme, which brings together the entire value chain and successfully mobilises relevant stakeholders, and brings tangible results as demonstration and pilot plants are being built in the EU.

- **Streamline governance within the EU Institutions**, recognising that the bioeconomy is part of the economy and deserves conditions to be competitive within the EU but also with the rest of the world.

- **Recognise and help quantify the climate benefits of the bioeconomy** and biobased products, materials, chemicals and energy with consistent LCA and PEF methodologies that factor in the upfront uptake of biogenic carbon.

- **Promote the development and use of standards and technical metrics** to accelerate the commercialisation of bioproducts, to reduce cost and time to market. Ultimately, standards and metrics will:

- Promote research, development and manufacturing innovation
- Secure supply chains and other infrastructure
- Streamline regulatory review and international harmonisation



## About EUBA

The European Bioeconomy Alliance (EUBA) is a unique cross-sector alliance dedicated to mainstreaming and realising the bioeconomy's potential in Europe.

## Our Mission

EUBA is committed to helping lead the transition away from a fossil-based society by raising awareness of EU, national and regional leaders on the bioeconomy's benefits.

## What brings us together

- The production and use of renewable resources for making innovative value-added everyday products and materials;
- The commitment to maximising the unused potential of European renewable resources encouraging the production of bio-based products and materials "Made in Europe";
- A dedication to resource-efficiency and sustainability.

## EUBA Members



For more information about the European Bioeconomy Alliance and its members, visit

[www.bioeconomyalliance.eu](http://www.bioeconomyalliance.eu)

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