

HOW THE BIOECONOMY CONTRIBUTES TO THE EUROPEAN GREEN DEAL

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The bioeconomy, as a catalyst for systemic change, tackles the economic, social and environmental aspects of the Green Deal, seeking new ways of producing and consuming resources while respecting our planetary boundaries and moving away from a linear economy based on extensive use of fossil and mineral resources.

A circular and sustainable bioeconomy has the potential to contribute to all dimensions and objectives of the European Green Deal by:

- **Delivering on Europe's economic prosperity and ensuring a fair and just transition.**
- **Producing fossil-free materials for a climate-neutral future.**
- **Enhancing the protection of the environment and ecosystems.**

BACKGROUND

It is estimated that the **bioeconomy contributes to almost 9% of the EU-27 labour force and 4.7% of the EU-27 GDP¹**. As a concrete operationalisation of the bioeconomy, more than 2,300 bio-based plants have been mapped by the Joint Research Centre across Europe².

To fully reap the economic, social and environmental benefits of the bioeconomy, dedicated bioeconomy strategies, investments and innovation are required at all levels in the EU. That is why the updated **European Bioeconomy Strategy** of 2018 states the need for the development of national and regional bioeconomy strategies. The European Commission supports the BIOEAST initiative, which will facilitate the development of national bioeconomy strategies in Central and Eastern Europe.

HORIZON 2020

Under Horizon 2020, **the European Commission already dedicated €3.85 billion of public funds into bioeconomy projects** over the past seven years, yet further research on innovative bioeconomy areas is needed and will be financed through Horizon Europe (2021-2027).

THE LINK BETWEEN THE BIOECONOMY AND THE COVID-19 RECOVERY

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.



“ *With its potential to connect and implement transformative policies holistically, the bioeconomy will contribute to all dimensions and objectives of the European Green Deal. Research and innovation will enable Europe to lead the green and digital transition.* ”

Mariya Gabriel, EU Commissioner for Innovation, Research, Culture, Education and Youth

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 fuels³.



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 materials⁴.



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 2035⁵ 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 products⁶**.



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>

1. Ronzon, T., Piotrowski, S., Tamosiunas, S., Dammer, L., et al., 2020. Developments of economic growth and employment in bioeconomy sectors across the eu. Sustainability 12, 4507. [10.3390/su12114507](https://doi.org/10.3390/su12114507).
2. https://ec.europa.eu/knowledge4policy/visualisation/bio-based-industry-eu_en
3. <https://www.lignoflag-project.eu/lignoflag-project/overview/>
4. <https://op.europa.eu/en/publication-detail/-/publication/9b823034-ebad-11e8-b690-01aa75ed71a1>
5. The Strategic Innovation and Research Agenda (SIRA 2030) for a Circular Bio-based Europe Realising a future-fit circular bio-society in Europe.
6. <https://ec.europa.eu/jrc/en/publication/brief-food-waste-european-union>

