



BIOSWITCH

WE ARE ALL BIO-BASED

Some key facts and figures on the EU bioeconomy



Bio-based Industries
Consortium



Horizon 2020
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This project has received funding from the Bio-Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 887727.

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According to the European Commission, the bioeconomy includes the production of renewable biological resources (also called "biomass"), and the conversion of these resources and waste streams into value added products, such as food, feed, bio-based products and bioenergy¹.

The EC distinguishes ten potential areas for exploitation within the bioeconomy:



1. Agriculture



2. Forestry



3. Fishing and aquaculture



4. Food, beverages and other agro-manufacturing



5. Bio-based textiles



6. Wood products and furniture



7. Paper



8. Bio-based chemicals and pharmaceuticals, plastics and rubber



9. Liquid biofuels



10. Bioelectricity

Did you know bioeconomy is crucial for a healthy and wealthy economy in Europe?

Bioeconomy is an important economic sector in Europe. It is estimated that the bioeconomy contributes to almost 9% of the EU-27 labour force and 4.7% of the EU-27 GDP², is annually adding value to the amount of € 614 billion and offering the potential to create 400,000 new green jobs by 2035³, in particular in rural and coastal areas e.g. in forestry and blue bioeconomy⁴. Most of the growth in employment is expected to take place in non-food sectors (including liquid biofuels and bioenergy), as well as in support services (logistics, equipment and input production, etc.).

¹"Innovating for Sustainable Growth - A Bioeconomy for Europe" (2012)

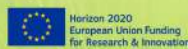
²Ronzon, T., Piotrowski, S., Tamosiunas, S., Dammer, L., et al., 2020. Developments of economic growth and employment in bioeconomy sectors across the EU. Sustainability 12, 4507. [10.3390/su12114507](https://doi.org/10.3390/su12114507).

³Draft Strategic Innovation and Research Agenda (SIRA 2030) for a Circular Bio-based Europe Realising a future-fit circular bio-society in Europe, <https://biconsortium.eu/file/2089/download?token=bUDC-6x6>

⁴Blue bioeconomy = bioeconomy based on aquatic biomass



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The bioeconomy, as a catalyst for systemic change, tackles the economic, social and environmental aspects of the **European 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.⁵

The bioeconomy will also 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.⁶

Are there many bio-based products on the market already?

Bio-based products are made – completely or partially – from biogenic material, which means they are made from renewable resources (also called “biomass”). The most frequently used types of biomass are sugar, starch, plant oils, wood and natural fibres. Partially bio-based products can also contain minerals or petrol.

Today, a wide range of products used daily in households are at least partly from renewable resources, even though most consumers are not aware that they are bio-based. This is for example often the case with construction materials, packaging, detergents, cosmetics and textiles. Much-needed supplies to combat the Covid-19 pandemic such as food and feed ingredients, (compostable) packaging, hand sanitisers, masks, tissues and energy are already made from renewable biomass feedstock.

⁵How the bioeconomy contributes to the European Green Deal (Factsheet), November 2020, https://ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_greendeal-bioeconomy.pdf

⁶Id.



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Do you have an idea of the many advantages that bio-based products can offer?

Bio-based products are often better performing, longer lasting, recyclable or more economical. Some examples



Enzymes are used instead of harsh chemicals to make leather soft and cotton fabric smoother and stinger, reducing the amount of water needed and chemical waste released into the environment.

Renewable resources can now be used to make durable, lightweight bio-based car plastics and tyres, which reduce fuel consumption and CO₂ emissions.



Biodegradable mulching films made from biomass enable farmers to use less herbicides in growing vegetables and, as they biodegrade in the soil, prevent the loss of soil which occurs when removing traditional non-biodegradable plastic films.

Bio-based materials are increasingly used in high-value engineering solutions. They can for example strengthen shock-proof screens for smartphones or tablets.



Innovative textile fibres from biomass make renewable carpets with vibrant colours and soft touch apparels, replacing fossil-based synthetic fibres.

Bio-based products can make significant contributions to mitigating climate change. The specifics of each product's impacts can vary, and not all bio-based products perform better in environmental terms, but there is strong evidence which suggests that many products can have a reduced impact on the environment.



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If brand owners and other economic actors switch from being fossil-based towards using more bio-based feedstocks, we reduce Europe's dependency on fossil fuels imports, making us less vulnerable to abrupt changes on the world market or possible conflicts. Valorising domestic biomass including food waste for even more applications, we create outlets for farmers, thus increasing their income, strengthening rural economies and improving rural development with more added value and jobs.



Did you know about these success stories of brand owners shifting from fossil to bio-based production?

Six brand owners of different ages and sizes, and representing various economic sectors (agriculture, food, forestry and chemical) feature in the BIOSWITCH best practice case studies we carried out. They provide testimony that using innovative bio-based materials it is possible to reduce their (environmental) impact while also improving technical attributes. You can find more information about them on our website: <https://bioswitch.eu/documents/#case>

Bioco

Bioco, an organic, artisan coffee roasting company from Belgium, has adopted a bio-based packaging solution that is both bio-based and industrially compostable for its full range of coffee products.



The Danish producer of toys and games, dantoy, has launched a series of bio-based plastic toys for pre-school children that are made of sugarcane derived poly-ethylene.

ECO by Naty

Eco by Naty (Sweden) has pioneered the use of bio-based components in (home) compostable, eco-friendly nappies and other baby care products.



The German sports equipment brand VAUDE is an environmentally friendly outdoor supplier that uses bio-based, recycled or purely natural materials in its Green Shape Core Collection.



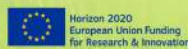
Alhondiga La Unión (Spain) is demonstrating how to turn horticultural waste in various bio-based materials and ingredients, including industrial compostable food packaging material.



Stora Enso (Finland) has introduced single-use food bowls made of renewable moulded wood fiber, which can substitute the common plastic bowls.




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