



CHAMPIONING THE INDUSTRIAL BIOECONOMY

Economic and Environmental Benefits of a Transformative UK Bioeconomy

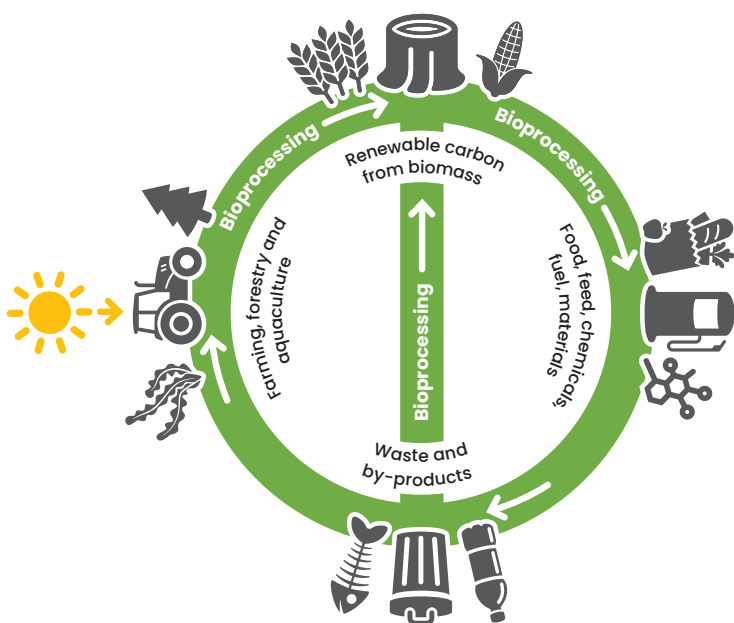


At our present consumption rate, by 2030, we will need two planets to both meet our resource needs and to absorb society's waste

The climate emergency

The climate emergency is the greatest challenge of our time. As greenhouse gas emissions continue to rise, driven by human consumption, so does the temperature of the planet. This is causing disease, food shortages, fuel poverty and a loss of biodiversity.

We simply cannot afford to keep digging up fossil resources and releasing more carbon dioxide into the atmosphere. We live in a time that calls for change and for sustainable solutions to ever more severe problems.



What is the bioeconomy?

The bioeconomy refers to an economic system in which biomass - such as plants, animals and microorganisms, and their by-products - are used to produce a wide range of products, where waste from one process becomes a resource for another¹.

Building a world-class bioeconomy will transform our economy. By removing our dependence on fossil resources, there is the potential to create resource-efficient, economically and environmentally sustainable solutions. These solutions will help to tackle global challenges and to create opportunities in the production of agri-foods, chemicals, materials, energy and fuel, as well as in health and the environment.

Benefits of the bioeconomy^{2,3,4}

Environmental benefits	Reduced reliance on fossil resources	Reduced greenhouse gas emissions	Contributes to UK Net Zero targets	Food security and sustainable food systems	Improved public health	Biodiversity conservation
	Increased soil health	Sustainable management of natural resources	Reduced plastic pollution and waste	Rural regeneration	Contributions to UN sustainability goals	Promotes responsible consumption
Economic benefits	Turns low value biomass, into high value products	Increased R&D spend	Generation of valuable intellectual property	Increase in UK exports	Creation of green jobs	Inward investment
	£220 billion GVA from UK economy	Over 5 million UK jobs	Over 14,000 bio-based products	£440 million GVA value of UK bio-based chemicals and materials sector	New disruptive technologies	Less reliance on imported products

¹ European Commission website, *Research and Innovation, Bioeconomy*; ² UK Government (2018) *Bioeconomy strategy: 2018 to 2030* [withdrawn]; ³ DESNZ. (2024) *Economic and climate benefits to the UK of an increased use of bio-based chemicals*, Unpublished report; ⁴ Iberdrola, *Bioeconomy: the challenges of a key model for sustainable development*

The bioeconomy in action



Compostable materials to drive food waste recycling and enhance soil fertility

- 9.5 million tonnes of food waste are generated by the UK every year. This waste is primarily sent to landfill, where it decomposes and accounts for 8% of all UK greenhouse gas emissions, and 31% of methane emissions⁵.
- There is a huge opportunity to prevent these emissions by composting food waste and turning it back to soil – replenishing our agricultural land.
- For effective household food waste collection, the use of compostable liners in food waste caddies has been shown to significantly increase household participation⁶.
- Other packaging that is contaminated with food waste, and hard to recycle by mechanical recycling, should also be compostable and collected with food waste, for example, coffee pods, fruit labels and teabags⁷.



Prevent agricultural plastic pollution

- Plastic mulch films are often used in agriculture to cover the soil around plants. While they have several benefits, such as weed suppression, moisture retention, and temperature control, the use of plastic mulch films has detrimental environmental consequences, as when not removed, they contribute to plastic pollution.
- This has spurred the development of certified biodegradable mulch films, which, in contrast to conventional mulch films, do not need to be removed, but are ploughed under after the harvest, where they will completely biodegrade in the soil⁸.
- This has many benefits for farmers and for society. Above all, it reduces the amount of persistent microplastics in agricultural soil caused by the remains of conventional plastic mulch films, and thus contributes to sustainable food production that keeps agricultural soil healthy and productive for a longer time⁷.



Reduce reliance on fossil resources for packaging

- Plastic packaging generates the most plastic waste of any sector, and its production is responsible for 4.5% of global greenhouse gas emissions.
- As of 2015, more than 3.1 billion tonnes of plastic packaging waste have been generated, yet only 9% of that has been recycled, 12% incinerated and 79% has accumulated in landfills or the environment^{9,10}.
- Novel packaging materials, made from non-fossil resources, such as seaweed, plants and waste materials, are already making a positive contribution to achieving Net Zero, and reducing microplastic accumulation in the environment.
- By using biomass as a feedstock for packaging materials, we avoid adding any further carbon dioxide to the atmosphere, and reduce our reliance on fossil resources.

5. Office for National Statistics (2021) *A review of household behaviour in relation to food waste, recycling, energy use and air travel*; 6. International Solid Waste Association (2023) *A Practitioner's Guide to Preventing and Managing Contaminants in Organic Waste Recycling*; 7. A Plastic Planet (2021) *The Compostable Conundrum, Making sense of when to use compostable materials*; 8. European Bioplastics (2023) *Q&A on certified soil-biodegradable mulch films*; 9. National Geographic, 10 *Shocking Facts About Plastic*; 10. Organisation for Economic Co-operation and Development (2022) *Plastic pollution is growing relentlessly as waste management and recycling fall short*

Our asks to Government

Policy recommendations to accelerate the transition to a transformative UK bioeconomy

The drive towards a more environmentally-friendly economy is not an option, it is an obligation. The bioeconomy and bio-based materials offer the ability to dramatically reduce our reliance on fossil resources. However the sector faces significant challenges, which need interventions to be overcome.

The key to unlocking the UK bioeconomy

1

We ask that UK government develop a unified cross-departmental biomass utilisation hierarchy and associated joined up policies and regulatory environment that ensures biomass and biowastes are prioritised for high value materials and products, to derive the maximum value from our bio-resources.

Accelerating the transition to a truly transformative UK bioeconomy

2

Recognise the benefits of the bioeconomy, and bio-based materials and products, with a dedicated and coherent policy and regulatory framework.

3

Introduce investment frameworks for biomanufacturing of bio-based materials and products, including access to risk capital, enabling multi-scale biorefining facilities.

4

Elevate the role of organic recycling in the waste management hierarchy, and invest in organic recycling infrastructure, allowing certified compostable products to be collected with food waste, to be composted or treated via Anaerobic Digestion with one or more composting phase.

5

Establish innovation principle-applied R&D priorities for bio-based materials and products, digital and AI advancement, intellectual property and innovation protection, plus skills development to support the transition away from fossil resources.

6

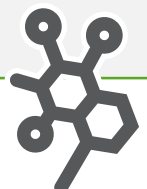
Ensure sustainable government procurement, by implementing a bio-preferred procurement scheme, where the use of bio-based products is incentivised over fossil-based incumbents.

7

Remove the Plastic Packaging Tax from certified bio-based and certified compostable packaging products containing more than 30% biomass content.

8

Restrict the use of the term biodegradable to specific applications e.g. agricultural plastics, forestry products and bio-lubricants, and incentivise their use through inclusion in the sustainable farming incentives agreement.



About the BBIA

Mission

The BBIA exists to champion the industrial bioeconomy to accelerate the development and adoption of bio-based and biodegradable materials and products through advocacy, collaboration, and education.

Purpose

We do this to reduce the impact of human consumption on the planet.

Vision

Our vision is for a more sustainable future, where the UK is a global leader in developing, manufacturing, using and exporting bio-based and biodegradable solutions.



Influence

We work closely with the government, policymakers, and industry leaders to promote and advocate for policies that support the growth of the bio-based and biodegradable industries.

Innovate

We are dedicated to advancing the bio-based and biodegradable industries through R&D initiatives. We support projects that aim to develop new sustainable materials and technologies that reduce waste and greenhouse gas emissions.

Connect

We provide a platform for organisations and professionals within the bio-based and biodegradable sector to network, collaborate, exchange ideas and form partnerships – encouraging positive debate and action across the bioeconomy.

Communicate

We proactively share information that elevates public and policy makers' knowledge about the benefits of bio-based and biodegradable products, to inform, educate, and inspire action.

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BIOME
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