



Bioeconomy Factsheet - UK

This factsheet gives an overview of the UK bioeconomy innovation technology system. It includes the key government interventions, research initiatives, networks and finance instruments, in the UK.

Bioeconomy Governance

The key **government bodies** are:

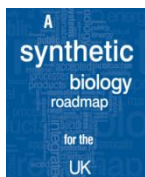
- Department for Transport (**DfT**)
- Department of Energy & Climate Change (**DECC**)
- Department for Business, Innovation and Skills (**BIS**)
- Department of Environment, Food, Rural Affairs (**DEFRA**)
- A joint-ministerial role champions the waste bioeconomy



Bioeconomy Strategies

A number of **national plans** and **strategies** have been published by public bodies to develop the UK bioeconomy:

- Building a High Value Bioeconomy: Opportunities from Waste (2015)
- Enabling the Transition to a Green Economy (2011)
- IB 2025 – Maximising UK Opportunities from IB in a Low Carbon Economy
- Synthetic Biology Roadmap for the UK 2012
- The High-value Manufacturing Strategy 2012
- A UK Roadmap for Algal Technologies 2013
- Anaerobic Digestions Strategy and Action Plan
- Biorefinery Roadmap for Scotland 2015



Bioenergy and Biofuels

To reach renewable energy targets, plans are set out in the **UK Renewable Energy Roadmap 2011** (updated 2012), including accelerating biomass heat and electricity.



UK Bioenergy Strategy



For bioenergy specifically the **Bioenergy Strategy 2012** provides a holistic view of biomass uses in setting bioenergy policy and electricity, heat, and transport policy.

The UK aims to stimulate private investment for renewable energy infrastructure. The **Energy Act 2004** and **2013** encompass the powers to introduce the following obligations and incentives to support the development of renewable markets:

Biofuels

- The **Renewable Transport Fuels Obligation Order** (RTFO) regulates, and **Certificates** (RTFCs) incentivise, suppliers to include increasing levels of biofuels in the road transport fuel mix.

Renewable Electricity

- **Feed-In-Tariffs** - incentives for small scale renewable electricity.
- **Renewables Obligation Order (RO)** regulates, and **Certificates (ROCs)** incentivise, large scale renewable electricity generation.
- **Contracts-for-Difference** - incentives for large scale renewable electricity (replacing ROCs).

Renewable Heat

- **Renewable Heat Incentive**
- **Domestic Renewable Heat Incentive**



Energy Act 2013



NNFCC

The Bioeconomy Consultants

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Climate Change Policy

The UK Government established the world's first legally binding GHG emission reduction target in the **Climate Change Act 2008**. Developing a more circular economy is seen as part of the solution. The **Carbon Plan 2011** (updated 2013) addresses how the UK will cut carbon emissions, which includes using renewables and bioenergy.

Finance

Public investment funds for commercial bioeconomy projects:

- **UK Green Investment Bank** (green projects on commercial terms)
- **Rainbow Seed Fund** (kick-starting UK synthetic biology companies)
- **CO2 Sense** (renewable energy projects)

Green Investment Bank

Technology Commercialisation Centres

The **Centre for Process Innovation**, part of Innovate UK's High Value Manufacturing Catapult, is the main hub for IB business support. Other thriving R&D commercialisation centres include:

- **Biorenewables Development Centre** York
- **BEACON** Wales
- **IBioIC** Glasgow
- **EBRI** Aston University

CATAPULT
High Value Manufacturing

Research & Technology Funding

The main funding bodies responsible for bioeconomy R&D:

- Biotechnology and Biological Sciences Research Council (**BBSRC**)
- Engineering and Physical Sciences Research Council (**EPSRC**)
- Natural Environment Research Council (**NERC**)
- UK Energy Research Council (**UKERC**)
- Innovate UK

Innovate UK
Technology Strategy Board

BBSRC
bioscience for the future

A number of **major R&D initiatives** have been activated to enhance the UK's potential for commercialising bioeconomy technologies:

- **IB Catalyst** scheme - £40 million RDI funding 2014-2015
- £25 million **advanced biofuel demonstration competition**
- Integrated Biorefining Research and Technology Club (**IBTI**)
- Bioprocessing Research Industry Club (**BRIC**)
- BBSRC Sustainable Bioenergy Centre (**BSBEC**)
- The Synthetic Biology Road Map, led to the development of **SynBio research centres** at the Universities of Manchester, Newcastle, Warwick, Edinburgh, Bristol, and Kings and Imperial College London.



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Networks

There are many active networks, associations, clusters and groups, promoting UK bioeconomy and linking stakeholders, including;

- 13 BBSRC Networks in Industrial Biotechnology and Bioenergy (**NIBB**).
- Innovate UK's **Knowledge Transfer Network**.
- Innovate UK's **Special Interest Groups** (including SynBio-SIG, IB-SIG, Algae Bioenergy-SIG, and Biopharmaceutical Formulation-SIG).
- **Industry Associations** – Biobased & Biodegradable Industries Association, Renewable Energy Association, AD Bioresources Association, Chemical Industry Association, and Bio-Industry Association.
- **Government Working Groups** – IB Leadership Forum, Synthetic Biology Leadership Council, Chemistry Growth Partnership.
- Many vibrant **regional bioeconomy clusters**, such as BioVale (Yorkshire), One Nucleus (London and Cambridge), North East Process Industry Cluster, Norwich Research Park, and BioCity Nottingham.



Biohorizons



The Biohorizons project and survey focused on consulting stakeholders across the bioeconomy, to identify areas for growth, opportunity, and barriers to innovation.



Biohorizons Project: <http://www.climate-kic.org/projects/biohorizons/>
LinkedIn: <http://linkd.in/1dPjX7R>

Bio Base NWE





The Bio Base NWE network represents leading biobased economy experts, advising entrepreneurs from across Europe on how to develop new ideas into marketable products, from the first feasibility study or market analysis up to funding and investment scenarios.



BioBase NWE Project:
<http://www.biobasenwe.org/en/home/>

This factsheet was produced by Biohorizons and Bio Base NWE partners

More Bioeconomy Factsheets can be found here:
www.nnfcc.co.uk/publications/ enquiries@nnfcc.co.uk