



# **Bioeconomy Factsheet**

## **United Kingdom**

July 2018

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



## BIOECONOMY GOVERNANCE

The UK's key government bodies are the:

- Department for Business, Energy and Industrial Strategy (**BEIS**)
- Department for Transport (**DfT**)
- Department of Environment, Food and Rural Affairs (**DEFRA**)

## NETWORKS AND CLUSTERS INDUSTRY ASSOCIATIONS

- The **BBSRC** has funded 13 collaborative Networks in Industrial Biotechnology and Bioenergy (**NIBB**), including **LBnet**, **Adnet**, **C1net**, **FoodWasteNet**, and **Phyconet**
- Innovate UK's Knowledge Transfer Network (**KTN**) and Special Interest Groups (**SIGs**)
- **SuperGen** Bioenergy Hub
- North East of England Process Industry Cluster (**NEPIC**)
- **BioVale** (Yorkshire)
- **WRAP**: Circular Economy and Resource Efficiency Experts

### Government Working Groups:

- The Industrial Biotechnology Leadership Forum
- The Synthetic Biology Leadership Council
- The Chemistry Growth Partnership

### Industry Associations:

- Bio-based and Biodegradable Industries Association (**BBIA**) help unite those working in the biodegradable and bio-based industries
- Anaerobic Digestion and Bioresources Association (**ADBA**) is the trade association for the UK anaerobic digestion (AD) industry
- Renewable Energy Association (**REA**) represents British renewable energy producers and promote the use of renewable energy in the UK

## LEGISLATION

In the **Climate Change Act** (2008) the UK government established the legally binding target of reducing GHG emissions by 80% by 2050 (relative to 1990 levels).

To meet this target, the UK government set **Carbon Budgets** restricting the amount of GHG emissions the UK can legally emit in a 5-year period.

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

**Renewable Transport:**  
**The Renewable Transport Fuels Obligation Order (RTFO)** requires fuel suppliers to show the percentage of their fuel supply that comes from renewable and sustainable sources.

**Renewable Electricity:**

- **Feed-in Tariffs:** incentives for small scale renewable electricity
- **Contracts for Difference:** incentive for large scale renewable electricity generation

**Renewable Heat:**

- Non-domestic Renewable Heat Incentive
- Domestic Renewable Heat Incentive

## BIOECONOMY STRATEGIES AND ROADMAPS

- A Green Future: Our 25 Year Plan to Improve the Environment (2018)
- Industrial Strategy: Building a Britain fit for the future (2017)
- Sustainable Fuels UK Road-Map (2017)
- Biodesign for the Bioeconomy: UK Synthetic Biology Strategic Plan (2016)
- Evidencing the Bioeconomy: An assessment of evidence on the contribution of, and growth opportunities in, the bioeconomy in the United Kingdom (2016)
- Biorefinery Roadmap for Scotland (2015)
- The Age of Bioscience Strategic Plan, BBSRC (2014)
- Bioenergy Strategy (2012)

The UK's "Bioeconomy Strategy" is expected in 2018.

## OPEN ACCESS PILOT PLANTS

**BioPilotsUK** is a collaboration of established open-access centres helping de-risk commercialisation of bio-based products and processes by trialling new technologies:

- **BEACON** Biorefining Centre of Excellence, Aberystwyth, Bangor and Swansea
- **IBioIC** Industrial Biotechnology Innovation Centre, Glasgow
- **BDC** Biorenewables Development Centre, York
- **CPI** Centre for Process Innovation (part of Innovate UK's Manufacturing Catapult Centre), Redcar, which includes the **National Industrial Biotechnology Facility (NIBF)**, **National Biologics Centre** and the **Anaerobic Digestion Development Centre**



IBB Industrial Plant © CPI

## FINANCIERS

Research councils involved in funding bioeconomy research include:

- **Biotechnology and Biological Sciences Research Council (BBSRC)** who announced £319M investment for UK bioscience research in April 2017
- **Natural Environment Research Council (NERC)**
- **Engineering and Physical Sciences Research Council (EPSRC)**

**Innovate UK**, who are a UK non-departmental public body also fund bioeconomy projects.

Support for innovation and research also comes from UK government departments, including a £22M competition from the **Department for Transport** to support the development of low carbon fuels for aviation and freight and a £4.7 billion **Industrial Strategy Challenge Fund** (with Innovate UK) to support UK businesses and researchers.

Other sources of bioeconomy funding include:

- **The Green Investment Group** who target investment in green infrastructure projects
- **CO2Sense:** an ethical investor in environmental projects and companies
- **Rainbow Seed Fund** who are dedicated to kick starting UK synthetic biology companies





## UNIVERSITY CENTRES AND RESEARCH

There are several university centres active in research across all areas of the bioeconomy including:

- **SynBio Research Centres** at the Universities of Manchester, Newcastle, Warwick, Edinburgh, Bristol, Kings College London and Imperial College London
- University of York: **Green Chemistry Centre of Excellence and Centre for Novel Agricultural Products**
- **Grantham Centres** in Imperial College London, London School of Economics and University of Sheffield



Coffee pod made of bioplastics © Biome Bioplastics

## INDUSTRY STAKEHOLDERS

Energy and fuel are big parts of the UK bioeconomy. The largest power station in the UK operated by **Drax Power** currently utilises wood pellets in three of their six 660MW boilers. There are two large first-generation bioethanol producers in the UK, **Vivergo Fuels** and **Ensus**.

Biobased chemicals are produced by the multinational speciality chemicals company, **Croda International**. There are also a number of smaller companies developing biobased chemicals, including **Celtic Renewables** and **Green Biologics**, and biobased materials, including **Cellulac** and **Biome Bioplastics**.

Other indirect players in the bioeconomy include the pharmaceutical and biopharmaceutical companies, like **GlaxoSmithKlein**.

The food and beverage industry is also a large indirect player in the bioeconomy. For example, **ABF** are a multinational food company who own Vivergo Fuels, and **Diageo** are a multinational beverage company who own many whisky distilleries, including one with an anaerobic digestion plant.

The agricultural side of the bioeconomy is dominated by multinationals like Cargill and Roquette, who own facilities for starch refinery and sweetener production.

## BIOBASE4SME

BioBase4SME is a strong network of leading bio-economy experts. The project offers innovation support services to North-West European SMEs and start-ups active in the bio-economy.

The project supports SMEs on their way to getting industrial proof of concept and a realistic business plan. Both are essential to convince any type of investor or client.

This factsheet was produced by the BioBase4SME partners, more factsheets and information on the project can be found here: <http://www.nweurope.eu/BioBase4SME>

BioBase4SME is co-funded 60% by the Interreg North-West Europe Programme. Interreg NWE fosters transnational cooperation to make Northwest Europe a key economic player and an attractive place to work and live, with high levels of innovation, sustainability and cohesion.

BioBase4SME partners are:



BioBase4SME is additionally co-funded by:

