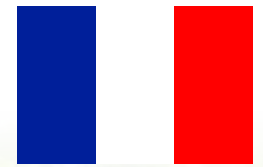


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**BioBase4SME**

European Regional Development Fund



Grapevine © Chambre d'agriculture de l'Herault

# Bioeconomy Factsheet France

July 2018

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



## BIOECONOMY GOVERNANCE

France's key government bodies are the:

- Ministry for the Ecological and Inclusive Transition (formerly Ministry of Ecology, Sustainable Development and Energy)
- Ministry of Education, Higher Education and Research
- The Ministry of the Economy, Industry and the Digital Economy
- The Ministry of Agriculture, Agrifood and Forestry
- High Council for Food, Agriculture and Rural Areas (CGAAER)

France's Grand Investment Plan of 2018 created an Innovation Council (Conseil de l'innovation).

## BIOECONOMY STRATEGIES AND ROADMAPS

- Bioeconomy Action Plan (2017)
- A Bioeconomy strategy for France (2015)
- The Circular Economy – A Key Strategy to Mitigate Climate Change (2015)
- National Strategy for Research – EUROPE 2020 (2015)
- The public policy project: Agroecology, a new production paradigm
- Circular Economy, Current State and Future Perspectives (2014)
- National Waste Plan 2014-2020
- Green Chemistry and Biofuels Roadmap (2014)
- New Industrial France – The Industry of the Future (Nouvelle France Industrielle - L'Industrie du Future) (2016)
- Key Technologies 2020 (Technologies Clés 2020)
- National Action Plan for Renewable Energy

## FINANCIERS

**The French Agency for Environment and Energy Management (ADEME)** funds research and implementation projects working within the environment, energy and sustainable development sectors.

**The French National Research Agency (ANR)** help finance projects in all science fields for universities, organisations, public research or companies (regardless of size).

**Investment for the Future (PIA)** (2010-2020) offers funding to help prepare France for the challenges of tomorrow. Past calls for research have included themes such as "Storage and Energy conversion", "Renewable energy – Hybridization, PV, Thermal Solar and Wind" and "Industrial methods for buildings construction and refurbishment".

**The France Public Investment Bank (bpifrance)**, founded in 2012, provides support to SMEs and micro enterprises.

**Sofinnova Partners**, an independent venture capital firm investing in early stage companies and corporate spin-offs, in clean technology and life science.

## LEGISLATION

The **Energy Transition for Green Growth Act** came into effect in 2015. With this, a range of goals were written into law, including:

- GHG Emission reductions of 40% compared with 1990
- A 50% reduction in waste sent to landfill through a shift towards a circular economy
- Increasing the share of renewable energy sources to 32% by 2025

## UNIVERSITY CENTRES AND RESEARCH

### Public research establishments (EPST):

- National Institute for Agricultural Research (**INRA**), e.g. Science for Food and Bioproduct Engineering (**CEPIA**) in Nantes
- National Centre for Scientific Research (**CNRS**), with locations across France
- National Research Institute of Science and Technology for Environment and Agriculture (**IRSTEA**)

### Public industrial establishments (EPIC):

- Agricultural Research Centre for International Development (**CIRAD**)
- Alternative Energies and Atomic Energy Commission (**CEA**)

### Grandes écoles:

- Schools of Agricultural and Life Sciences (**ENSA**) like **AgroParisTech**
- National Institute of Applied Sciences (**INSA**) like INSA Toulouse

### Grandes écoles:

- University of Reims Champagne-Ardenne

## OPEN ACCESS PILOT PLANTS

**Bioraffinerie Recherches et Innovations (B.R.I.) / BioDémono**, an open technological platform for the industrial scaling-up of biotechnology processes (part of ARD) in Bazancourt-Pomacle near Reims.

**Toulouse White Biotechnology** which combines the Toulouse INRA, INSA and CNRS and has a pre-industrial demonstrator.

**BIOGIS** center of **PIVERT** Institute in Compiègne.

## NETWORKS AND CLUSTERS INDUSTRY ASSOCIATIONS

N.B. In 2018, the French government announced a restructuring of clusters over the next 4 years.

- **Association Chimie du Végétal** (Plant based chemistry)
- **IAR cluster** (Industry and Agro-resource)
- **CEBB** Centre Européen de Biotechnologie et de Bioéconomie
- **Institut Carnot** which has 38 different networks for various industries including I2C (chemicals) and 3BCAR (bioeconomy)
- **Matikem** (Nord-Pas de Calais)
- **Axelera** (Auvergne/Rhone-Alpes region)
- **Nov&atech** (Normandy)
- **Cosmetic Valley** (Normandy, Ile de France, centre)
- **VEGEPOLYS** (Pays de Loire)
- **Ceebios**
- **IMPROVE** – A mutualised institute for plant-based proteins
- **ARD**
- **FRD**

### Institutes for the Energy Transition (ITE):

- **PIVERT** – Plant chemistry and oleaginous biomass
- **Greenstars** – Microalgae production for biofuels
- **L'Institut français des matériaux agro-sourcés** (IFMAS) – Green chemistry

### Agro-industrial technical institute (ITAI):

- **ITERG** – Multidisciplinary including biotechnology and green chemistry
- **Extractis** – Plant biomass extraction, fractionation and chemistry
- **CEVA** – Marine biotechnology and industry algae

## INDUSTRY STAKEHOLDERS

France has several large chemicals and fuel companies that are active in the bioeconomy, including **Arkema** (biobased plastic), **Solvay**, **Air Liquid/SEPPIC**, **TechnipFMC**, **l'OREAL**, **Michelin**, **PCAS/Novacap** (which owns **Protéus**), **Saint Gobain**, **Axens** and **Total**. Another French industrial giant is **Airbus**, who are involved in biobased aviation fuel.

France is the EU's largest producer of bioethanol and has several large agro-industrial companies that are involved in bioethanol and/or biobased products, including **Tereos**, **Roquette**, **Vivescia**, **Crystal Union**, **Cristalco**, and **Avril**.

**BASF** and **Cargill** are amongst a number of other large companies that have significant production and/or research sites in France. This includes the world's largest yeast producer, **Lesaffre International**, who also make yeast strains for industrial biotechnology.

French energy companies such **ENGIE**, **IFP** and **EDF** all work with biomass or biofuels.

France also has several promising young bioeconomy companies including **Global Bioenergies** and **Wheatoleo**. Others include **PILI**, **Biolie**, **Ynsect**, **Deltalys**, **Carbios**, **Evertree**, **Futuramat** and **NaturePlast**.

Global waste and water companies, **Suez Environment** and **Veolia** are also headquartered in France.

**EcoTechnilin**, **LINEO** and **Terre de Lin** are working on natural fibre applications.

Agricultural cooperatives like **CAPSEINE**, **AGRIAL**, **CAVAC** and **LIMAGRAIN** are also key players in the bioeconomy.



Development of a new biobased material © UniLasalle Rouen

## 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:



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