



(<https://web.archive.org/web/20231003230056/http://www.jin.ngo/>).

[Biobased energy \(https://web.archive.org/web/20231003230056/https://jin.ngo/component/tags/tag/bio-energy\)](https://web.archive.org/web/20231003230056/https://jin.ngo/component/tags/tag/bio-energy)

Bio-based economy and bioenergy

The bio-based economy is an economy where fossil raw materials are replaced by sustainable biomass (e.g. crops, organic waste and residues) to produce food, chemicals, energy and fuel. The transition to a bio-based economy provides new opportunities for the industrial sector to mitigate climate change impacts and in the same time decrease their dependency on fossil fuels. On the other hand, there are also potential risks that need to be considered, including the competition between food supply and biomass production, over-exploitation of natural resources, loss of biodiversity and loss in consumer trust.

Bioenergy is one of the cheapest alternatives to produce sustainable energy on a large scale. In coming years, it is expected that the use of biomass and the development of innovative and efficient conversion techniques will play a prominent role to achieve national sustainability ambitions. Generally, the choice of biomass-to-energy pathways is determined by the market as a result of:

1. Endowments (available biomass resources, production factors, etc.);
2. International, national and sub-national policies and policy instruments which address bio-energy stakeholders; these policies may interact so that actual policy results may differ from intended policy effects; and
3. Possible market system inefficiencies (finance limitations, information asymmetries, non-aligned incentives, etc.).

The resulting bioenergy pathways may, however, not be those that would be fully desired from a combined environmental, economic and social sustainability perspective. Bioenergy is a complex business with many potential resources and final uses. It is usually difficult for policy makers and market actors to fully understand, within this complex market environment, the economic, social and environmental implications of their strategic bio-energy pathway decisions.

The development of a truly efficient and sustainable bio-based economy therefore requires a better understanding of the real environmental, economic and social costs and benefits of using biomass resources. In addition, increasing the awareness and transparency of sustainability trade-offs and co-benefits in the public debate about bioenergy and the energy transition as well as the development of an efficient policy framework are crucial to achieve the development of such an economic system.

JIN's current activities on bio-based energy

With respect to bio-based energy production and consumption, JIN coordinates the project **BIOTEAM** (<https://web.archive.org/web/20231003230056/http://sustainable-biomass.eu/>) to:

- Learn from stakeholders what are desired bioenergy pathways (e.g. within categories liquids, solids and gases) for achieving Member States' sustainability priorities.
- Assess the sustainability of a wide range of bioenergy pathways.

- Analyse and understand market system dynamics (with the assistance of stakeholders) to identify inefficiencies and barriers to enable the market to pick up the desired pathways.
- Support public and private stakeholders in making the changes in their decision making towards the desired pathways by conducting policy assessments and fomrulating policy recommendations that could contribute to the adjustment in government bio-energy policy making and in private stakeholders decisions in Member States.

