



The
Federal Government

National Bioeconomy Strategy

Summary



The full version of the National Bioeconomy Strategy
can be found here:
<https://www.bmbf.de/bioeconomy>



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Summary

Sustainability and climate action are the key issues of the 21st century. Humankind has reached a point where the continued over-exploitation of our resources threatens to cause considerable damage to the biosphere. To preserve the conditions necessary for the survival of humankind, animals and plant life, the consumption of natural resources must be reduced to a level that is ecologically sustainable. At the same time, it remains vitally important that we ensure economic prosperity and safeguard the right to future development of a growing global population.

The objective of the bioeconomy is to combine economy and ecology to ensure a more sustainable use of resources. The Federal Government of Germany defines the bioeconomy as the production, exploitation and use of biological resources, processes and systems to provide products,

processes and services across all economic sectors within the framework of a future-oriented economy. Innovations in the bioeconomy unite biological knowledge with technological solutions and utilize the inherent properties of biogenic raw materials such as their natural cycles, renewability and adaptability. The bioeconomy harbours the potential to provide new kinds of products and processes that protect natural resources and ensure our future prosperity.

In its National Bioeconomy Strategy, the Federal Government lays down the guidelines and objectives for its policy on the bioeconomy and lists measures for their implementation. The Strategy builds on the National Research Strategy BioEconomy 2030 and the National Policy Strategy on Bioeconomy to pool the various political strands together into a coherent framework. The National Bioeconomy Strategy lays the foundations for Germany to strengthen



The bioeconomy strategy of the German government

Policy guidelines and goals

Guideline 1

Harnessing biological knowledge and responsible innovation for sustainable, climate-neutral development

Guideline 2

Using biogenic raw materials for a sustainable, circular economy

Common strategic goals for research funding and a policy frameworks

1

Develop bioeconomy solutions for the 2030 Agenda for Sustainable Development

2

Recognize and harness the potential of the bioeconomy within ecological boundaries

3

Enhance and apply biological knowledge

4

Establish a sustainable raw material base for industry

5

Promote Germany as the leading location for innovation in the bioeconomy

6

Involve society in the bioeconomy and strengthen national and international collaboration

Implementation

Research funding

Framework conditions

Cross-cutting instruments

its role as a bioeconomy leader and to create the technology and jobs of tomorrow. With the Strategy, the German Federal Government also assumes its global responsibility in the interconnected international bioeconomy.

Two overarching guidelines support the objectives and actions set out in the National Bioeconomy Strategy. The first guideline highlights how biological knowledge and advanced technology are the pillars of a future-oriented, sustainable and climate-neutral economy. The second guideline relates to the raw materials used by industry and the need for a sustainable and circular economy based on the use of biogenic resources.

The Federal Government's National Bioeconomy Strategy addresses a broad spectrum of objectives targeting different levels of society across all economic sectors. It can be summarized in six common strategic goals:

- 1) Develop bioeconomy solutions for the 2030 Agenda for Sustainable Development
- 2) Recognize and harness the potential of the bioeconomy within ecological boundaries
- 3) Enhance and apply biological knowledge
- 4) Establish a sustainable raw material base for industry
- 5) Promote Germany as the leading location for innovation in the bioeconomy
- 6) Involve society and strengthen national and international collaboration

For each of these strategic goals, specific implementation objectives have been formulated in the context of research funding, the pertinent framework conditions and cross-cutting instruments.

Research is the key to recognizing and harnessing the opportunities offered by the bioeconomy. Future research funding will focus on the following building blocks: biological knowledge as the key to the bioeconomy; converging technologies and transdisciplinary cooperation; boundaries and potentials; translation to real-life application; bioeconomy and society; and international research collaboration.

The Strategy describes policy areas, in which the Federal Government will implement specific actions over the coming years, in order to improve the framework conditions for the bioeconomy. These are as follows: reducing pressure on land use; ensuring the sustainable production and supply of biogenic raw materials; expanding and developing the supply chains and networks of the bioeconomy; designing instruments to establish and bring bio-based products, processes and services to the market; ensuring policy coherence; making use of the opportunities offered by the bioeconomy for the development of rural areas; and taking advantage of digital technology for the bioeconomy.

To do justice to the concept of the bioeconomy as an all-embracing approach, the Federal Government applies cross-cutting instruments to implement its Strategy. This involves the establishment of an advisory committee, co-operation between the Federal and Länder levels of government and at European and international level, measures to foster communication and open dialogue with various groups of society, initiatives to promote training and skills development and setting up a bioeconomy monitoring system.

Goals of the National Bioeconomy Strategy

Common strategic goals and implementation objectives for research funding and the development of a policy framework

1

Develop bioeconomy solutions for the 2030 Agenda for Sustainable Development

› Align the bioeconomy with the sustainable development goals (SDGs) of the United Nation's 2030 Agenda



- › Guarantee food security for a growing world population
- › Use climate-neutral production to achieve the 1.5-degree goal
- › Protect, maintain and use biodiversity

2

Recognize and harness the potential of the bioeconomy within ecological boundaries

- › Understand production systems in an ecosystem context
- › Research conflicting objectives and interactions
- › Integrate economy and ecology in holistic approaches
- › Establish a comprehensive monitoring system, measure and analyze biomass flows and implement comparative sustainability assessments

3

Enhance and apply biological knowledge

- › Understand and model biological systems
- › Develop novel production organisms for agricultural systems and industry
- › Develop and establish innovative process engineering concepts for bio-based production systems
- › Use converging technologies such as digitization, artificial intelligence, nanotechnology, miniaturization, robotics, and automation for the bioeconomy
- › Strengthen interdisciplinary collaboration
- › Expand the infrastructure available for research and technology transfer

4

Establish a sustainable raw material base for industry

- › Produce and supply sustainable biogenic raw materials
- › Conserve agricultural land and maintain soil fertility
- › Use biogenic raw materials and by-products
- › Reduce dependency on fossil raw materials
- › Use the potential of the bioeconomy for the development of rural areas
- › Develop novel cycles for the production, processing and recycling of biogenic resources, for instance in urban areas

5

Promote Germany as the leading location for innovation in the bioeconomy

- › Strengthen research transfer and take advantage of the opportunities offered by the bioeconomy for business models, job creation and increased revenue across all economic sectors
- › Accelerate the launch of bioeconomy products, processes and services on the market
- › Establish novel supply chains
- › Support start-ups and small and medium-sized enterprises
- › Promote clusters und model regions

6

Involve society in the bioeconomy and strengthen national and international collaboration

- › Set up an advisory committee featuring a wide array of expertise
- › Promote dialogue with interested groups in society
- › Strengthen the social sciences in research for the bioeconomy
- › Expand European and international collaboration