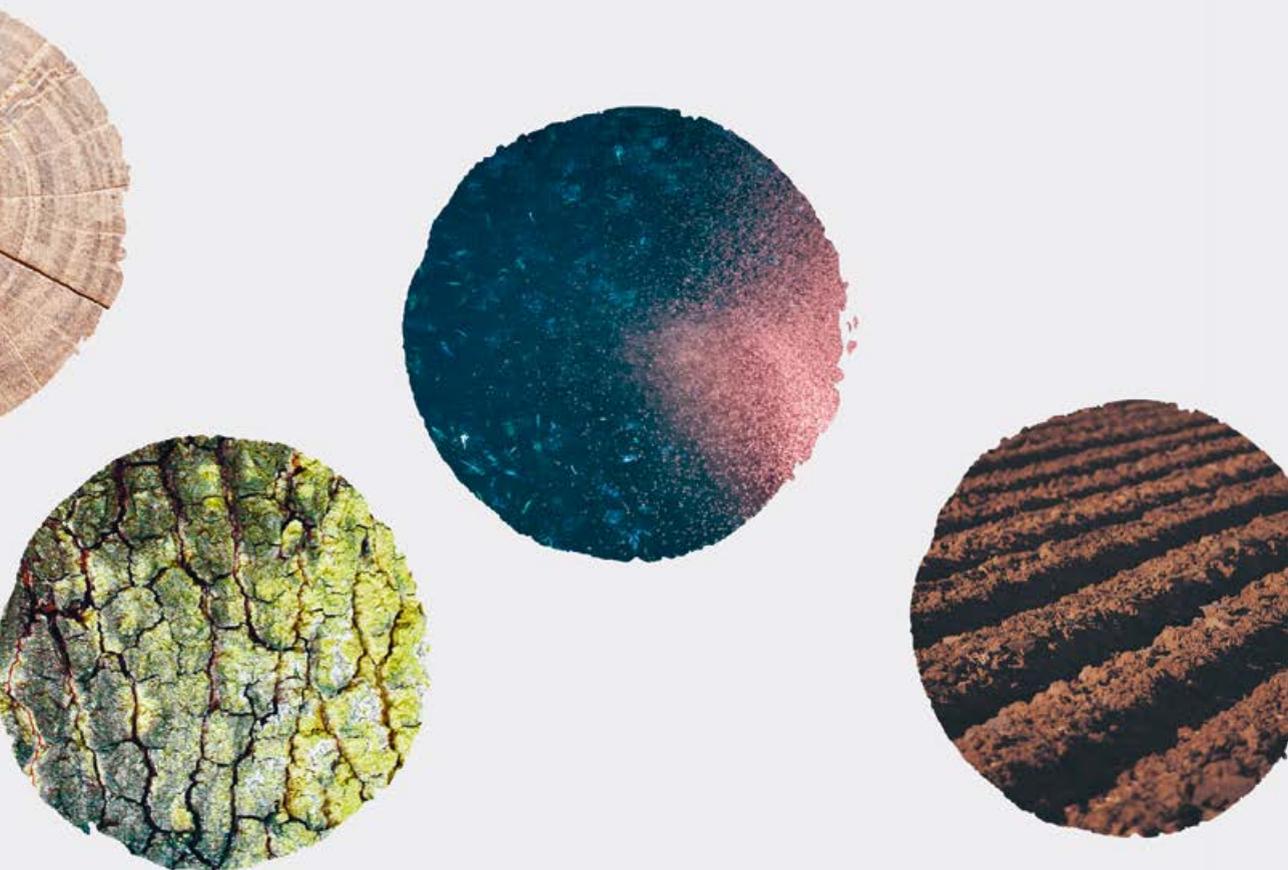


Familiar resources – undreamt of possibilities

The Government's Bioeconomy Strategy



Norwegian Ministries

Strategy



English
Summary

The Government's bioeconomy policy targets sustainable, effective and profitable production, extraction and use of renewable, biological resources into food, feed, ingredients, health products, energy, materials, chemicals, paper, textiles and numerous other products. National focus on the bioeconomy should lead to increased value creation and employment, reduced emission of climate gasses, as well as more efficient, profitable and sustainable use of renewable biological resources. Priority will be given to measures with a national effect on both value creation and employment as well as reduced climate gas emissions and/or more efficient and sustainable use of resources. The national effort should underlie all sectors in accordance with four priority areas:

- i. Cooperation across sectors, industries and thematic areas
- ii. Markets for renewable bio-based products
- iii. Efficient use and profitable processing of renewable, biological resources
- iv. Sustainable production and extraction of renewable biological resources

Emphasis will be placed on the potential that arises across sectors from the development and use of know-how and

technology in this field. A national effort should in particular advance know-how and technology platforms capable of using renewable biological resources from several productions and with application in several industries.

The following principles should apply for a value creation and sustainable use of renewable biological resources:

1. The population's need for food is of paramount concern
2. Resources should be used and re-used in an efficient manner
3. Use of resources should be profitable

The contribution of the bioeconomy to a more circular and environmentally friendly low emission economy is an important rationale for public policy initiatives. In this respect, the internalization of negative effects on the climate and the environment in the product prices would be the most efficient way of promoting the bioeconomy. Another important measure would be to develop public policy through a more holistic and coherent approach, across industries and steps in the value chains. The authorities also have a role in ensuring adequate regulations and adjustments for different types of market failure.

In order to promote **cross-cutting cooperation** focus will be on:

- Ensuring that public support to networking and clustering activities advance the development of new and cross-sectorial value chains
- Coordinating project support along the whole value chain from R&D to innovation and market introduction
- Coordinating across thematic areas and sectors in relevant instruments within Innovation Norway and the Research Council of Norway
- Ensuring that public support to research centres advance committing, sector-overarching and interdisciplinary cooperation between research institutions, suppliers and product developers
- Stimulating international R&D cooperation relevant to the bioeconomy, including Norwegian participation in the EU Framework Programme for Research and Innovation and bilateral cooperation with prioritized countries
- Using the Norwegian participation in OECD and other international organisations to meet the need for more knowledge as indicated in this strategy
- Examining how different bioeconomy related councils are organized, with a focus on cross-sectorial coordination, institutional efficiency and social dialogue

In order to promote **markets for renewable bio-based products** focus will be on:

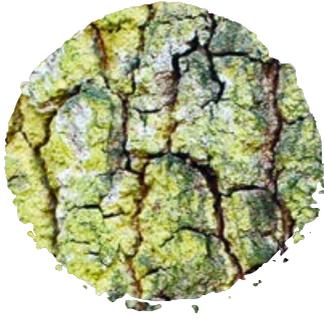
- Knowledge and information on market opportunities, technologies, processes and products enabling efficient, profitable and sustainable production and use of renewable, biological resources
- Considering the use of standards, labelling and certification for renewable bio-based products, where relevant, to elucidate the advantages of various bio-based products
- Developing know-how on climate effects from increased use of bio-based alternatives to fossil-based materials and chemicals
- Establishing a new investment company which will contribute to the reduction of climate gas emissions
- Allowing Investinor to invest in mature, unlisted companies within earmarked funding for the forest and timber industry
- Strengthening Innovation Norway's innovation loan scheme, enabling them to increase lending to investment projects related to start-up companies, innovation, adaptation, internationalisation and development, and where there is little private risk-capital available
- Continuing the bio-energy initiative through the Bioenergy Programme and Enova



- Ensuring a public procurement practise contributing to the reduction of environmentally degrading effects and an advancement of climate friendly solutions, where relevant, which includes taking life cycle costs into consideration
- The public sector being a role model and motivator for environmentally friendly building solutions
- Scaling up the general turnover requirement for bio-fuel for road going traffic, and the advanced bio-fuel part of this, until 2020
- International cooperation and agreements at government level
- Placing new bioproducts in adequate categories in customs tariffs and trade agreements
- Proposing a separate scheme for improving bottlenecks which hamper the effective transportation of timber, in cooperation with the forest and timber industry, something to be elaborated on in the National Transport Plan for 2018–2029
- Developing a White Paper on waste policy and the circular economy
- Developing a strategy for landing and use of residual waste from the fisheries
- Stimulating increased use of life cycle analysis in relevant areas
- Ensuring increased knowledge and development of technology for the recycling of biomass in manufacturing, including the reduction of unwanted substances, such as extraneous matter, environmental toxins and infective agents

In order to promote **efficient use and profitable processing** focus will be on:

- Allocating funds to investments in test and demonstration facilities that can be shared by several companies and R&D institutions
- Strengthening the funding of bio-economy-related R&D in the Research Council of Norway
- Coordinating relevant public instruments promoting industrial processing within the Research Council of Norway and Innovation Norway
- Revising fertilizer regulations and ensuring increased use of organic fertilisers/waste, including regulations for depositing, storage and spreading
- Increasing the use of residual materials to make profitable products
- Running evaluation of relevant regulations to ensure efficient use of resources



In order to promote **sustainable production and extraction** focus will be on:

- Utilizing the potential for increased, profitable and more efficient production, extraction and use of renewable biomass from agriculture, forestry, fisheries and aquaculture within sustainable boundaries
- Knowledge-based adjustments of production towards new types of biomass, harvesting methods, processing, storage etc.
- Following up the forest related measures in the Climate Agreement, in order to increase carbon storage and access to environmentally friendly raw materials and building materials
- Stimulating the preservation and development of forest resources through active reforestation and plant breeding
- Developing the forest road network through targeted use of grants and forest funds, while safeguarding the diversity of nature and outdoor life
- Increasing the use of Norwegian raw materials in the development of feed and other intermediate products, where it is profitable and environmentally sustainable
- Developing regulations and resource management regimes for cultivation, harvesting and exploitation of macroalgae
- Developing bioprospecting regulations ensuring that research communities and companies can extract biological material from nature within sustainable boundaries
- Increasing know-how and area planning across local and regional government boundaries, for further development of the locality structure of the aquaculture industry
- Increasing exploitation of marine species, by facilitating multi-trophic aquaculture, establishing a management plan for calanus and considering a concession system for mesopelagic fisheries
- Developing insight as to how environmental impacts from increased production and extraction of biological resources can be held within sustainable boundaries
- Dealing with potential conflicts between the cultivation of new species and established aquaculture, fisheries, shipping and outdoor life in a sound way



- Upgrading industry skills regarding efficient, climate friendly and sustainable production and extraction
- Developing the interaction between public instruments and private environmental considerations, with an aim at increased knowledge and strengthened environmental considerations in sustainable forestry
- Mapping where old forests are found to ensure sound management, and together with the forest industry investigate the most appropriate measures for increased protection of key biotopes, cf. the Government White Paper No. 6 (2016–17)

The Research Council of Norway, Innovation Norway and Siva shall draw up a common action plan for the implementation of recommendations and instructions in this strategy.



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