



KUNGL. SKOGS- OCH LANTBRUKSAKADEMIEN

Summary of KSLA's input to EU Bioeconomy strategy

Strengthening the EU Bioeconomy through Forests, Agriculture, and Circular Innovation

The Royal Swedish Academy of Agriculture and Forestry (KSLA)

Founded in 1811, KSLA is an independent platform for knowledge and dialogue on agriculture, forestry, food, and natural resources. We advocate for a strong, coherent EU bioeconomy strategy that enhances competitiveness, reduces fossil dependency, and revitalizes rural areas.

1. Strategic Pathways for a Resilient Bioeconomy

KSLA proposes three strategic pathways:

- **Autonomy and Preparedness:** Reduce reliance on imports of energy, food, wood and other critical bio-based materials for EU's bioeconomy.
- **Transition to a Circular Bioeconomy:** Replace fossil-based systems with sustainable, circular solutions based on an increased production and use of biomass.
- **Jobs and Inclusion:** Create rural employment and ensure no one is left behind.
These must be supported by coherent governance, technology neutrality, policy alignment, and effective implementation tools.

2. Unlocking Innovation and Investment

To drive the circular bioeconomy, the EU must:

- Increase funding for research that enhances resource efficiency, food and energy security.
- Support networks and clusters of companies, researchers, and experts to accelerate innovation.
- Facilitate commercialization of biorefineries that convert crops, residues, and waste into high-value products like biofuels, biochemicals, and green materials.

3. Forests and Agriculture as Climate Solutions

Forests and agriculture are key to climate mitigation and adaptation. KSLA calls for:

- Recognition of the **substitution effect** in the LULUCF regulation.
- Active, sustainable land management with incentives for climate adaptation.
- Full life cycle assessments in climate policy, including bioenergy and material use.
- Rejection of any legislation on the cascading principle instead we are in favor of flexible, systems-based approaches and market-based solutions.

4. Coherent and Simplified Policy Framework

*The complexity of overlapping EU regulations under the Green Deal hinders investment. KSLA proposes a **Circular Bioeconomy Omnibus Package** to streamline:*

- RED III, ETD, Taxonomy, State Aid rules, EU Deforestation Regulation, NRL, and LULUCF.
- Voluntary, market-based carbon and nature credit systems.

5. Empowering Rural Stakeholders

Farmers and forest owners are already advancing circularity through resource sharing and residual flows. However, bottlenecks such as costly logistics and underdeveloped recycling systems must be addressed through:

- Investment at farm, industry, and EU levels.
- Education, vocational training, and lifelong learning.
- Targeted support for sustainable practices and circular business models.

6. Enhancing Energy Security and Bioenergy Deployment

Bioenergy provides almost 40% of Sweden's energy and is vital for EU energy independence. KSLA recommends:

- Setting targets for biogas, drop-in biofuels, and bioenergy production.
- Adapting EU block exemption rules to support biogas tractors and heavy vehicles.
- Supporting liquid biofuel production and modern biorefineries using sustainable forest and crop-based feedstocks.

7. Policy Coherence and Global Leadership

To strengthen the EU's global leadership in bioeconomy:

- Encourage national circular bioeconomy strategies with bottom-up approaches.
- Improve EU impact assessments to reflect cumulative socio-economic and land-use effects.
- Develop circular bioeconomy diplomacy to build strategic partnerships globally.

Conclusion

The EU bioeconomy strategy must be a cornerstone of the EU policies, rooted in sustainability, innovation, and inclusiveness. KSLA urges the EU to empower rural actors, streamline policy, and invest in biomass-based circular solutions that secure Europe's autonomy, climate goals, and rural vitality.

Public Consultation - Bioeconomy Strategy: Towards a Circular, Regenerative and Competitive Bioeconomy

Fields marked with * are mandatory.

Introduction

The Commission plans to adopt a new EU bioeconomy strategy by the end of 2025. The strategy will build on the first EU bioeconomy strategy (2012), the updated strategy (2018) and the progress report (2022). It will be in line with the priorities of the Political Guidelines for 2024-2029 and other strategies and initiatives that have close links to the EU bioeconomy.

Global competitiveness, sustainability and circularity have been defined as important aspects of the EU bioeconomy and drivers to renew our industries, modernise our primary production systems, reduce our reliance on harmful fossil fuels, and enhanced environmental protection.

Furthermore, the new EU bioeconomy strategy is a flagship action of the recently adopted Competitiveness Compass and the Clean Industrial Deal, with the aim of improving the competitiveness of the EU bioeconomy sector.

Therefore, the EU bioeconomy strategy aims to advance the development of a sustainable, circular and competitive bioeconomy in the EU while respecting planetary boundaries and ensuring a fair transition across the EU, at national, regional and local level. It can help to reduce the pressure on ecosystems while ensuring alignment with the Kunming-Montreal Global Biodiversity Framework's targets for biodiversity protection and restoration.

Why are we consulting?

Your feedback is vital to identifying the objectives of the new bioeconomy strategy as well as challenges and barriers and to prioritising possible policy measures to address these. The questions of this public consultation also address how the bioeconomy could help achieve EU climate and biodiversity goals. This is the first EU-wide consultation on the bioeconomy organised by the Commission.

Target audience

The bioeconomy provides solutions to all sectors and associated services that produce, process, use or distribute biological resources, such as animals, plants, micro-organisms, biomass and organic waste.

Therefore, this public consultation addresses the entire value chain of biological resources from primary

production to advanced manufacturing and services, including the sectors and industries below:

- Primary sectors: agriculture, forestry, fisheries, and aquaculture.
- Processing industries: food, feed, and bio-based materials and products.
- Biotech and biomanufacturing sectors.
- Organisations supporting research, innovation and technology transfer.
- Service industry for bio-based solutions and ecosystem services (e.g. provision of clean air and water).
- Recycling industries of organic waste, including industrial by-products and household bio-waste.

About you

* Language of my contribution

- Bulgarian
- Croatian
- Czech
- Danish
- Dutch
- English
- Estonian
- Finnish
- French
- German
- Greek
- Hungarian
- Irish
- Italian
- Latvian
- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

* I am giving my contribution as

- Academic/research institution
- Business association
- Company/business
- Consumer organisation
- EU citizen
- Environmental organisation
- Non-EU citizen
- Non-governmental organisation (NGO)
- Public authority
- Trade union
- Other

* First name

Per

* Surname

Eriksson

* Email (this won't be published)

per.eriksson@ksla.se

* Organisation name

255 character(s) maximum

The Royal Academy of Agriculture and Forestry

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

Transparency register number

Check if your organisation is on the transparency register. It's a voluntary database for organisations seeking to influence EU decision-making.

* Which sector does your organisation represent?

- Forest owners (public and private)
- Forestry industry
- Forest certification schemes
- Forest-based industry
- Non-wood industry
- Farmers' associations
- Trade and business associations
- Fertilizers and feed companies
- Biogas companies
- Other agriculture business
- Biotechnology associations
- Biotechnology companies and industry
- Biorefineries and chemistry associations
- Environmental NGOs
- Research institutions and project
- Investment funds
- Water companies/water authorities
- Consumers associations
- Public authorities
- Citizens
- Others

If others, please specify:

200 character(s) maximum

* Please, specify the type of product your organisation produces or represents:

- Intermediate product (e.g. ingredient or component for a final product)
- Final product (used as it is)
- Both intermediate and final products
- Other (e.g. services)

*Country of origin

Please add your country of origin, or that of your organisation.

This list does not represent the official position of the European institutions with regard to the legal status or policy of the entities mentioned. It is a harmonisation of often divergent lists and practices.

- Afghanistan
- Åland Islands
- Albania
- Algeria
- American Samoa
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Djibouti
- Dominica
- Dominican Republic
- Ecuador
- Egypt
- El Salvador
- Equatorial Guinea
- Eritrea
- Estonia
- Eswatini
- Ethiopia
- Falkland Islands
- Faroe Islands
- Fiji
- Finland
- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands
- Gabon
- Georgia
- Germany
- Ghana
- Libya
- Liechtenstein
- Lithuania
- Luxembourg
- Macau
- Madagascar
- Malawi
- Malaysia
- Maldives
- Mali
- Malta
- Marshall Islands
- Martinique
- Mauritania
- Mauritius
- Mayotte
- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
- Saint Martin
- Saint Pierre and Miquelon
- Saint Vincent and the Grenadines
- Samoa
- San Marino
- São Tomé and Príncipe
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Sierra Leone
- Singapore
- Sint Maarten
- Slovakia
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
- Spain
- Sri Lanka

- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- Gibraltar
- Greece
- Greenland
- Grenada
- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Morocco
- Mozambique
- Myanmar/Burma
- Namibia
- Nauru
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Sudan
- Suriname
- Svalbard and Jan Mayen
- Sweden
- Switzerland
- Syria
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Türkiye
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine

- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- Cuba
- Curaçao
- Cyprus
- Czechia
- Democratic Republic of the Congo
- Denmark
- Israel
- Italy
- Jamaica
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Kyrgyzstan
- Laos
- Latvia
- Lebanon
- Lesotho
- Liberia
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Pitcairn Islands
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- Russia
- Rwanda
- Saint Barthélemy
- Saint Helena
Ascension and
Tristan da Cunha
- Saint Kitts and Nevis
- Saint Lucia
- United Arab Emirates
- United Kingdom
- United States
- United States
Minor Outlying
Islands
- Uruguay
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam
- Wallis and Futuna
- Western Sahara
- Yemen
- Zambia
- Zimbabwe

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. **For the purpose of transparency, the type of respondent (for example, 'business association', 'consumer association', 'EU citizen') country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published.** Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

* Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

Anonymous

Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.

Public

Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

I agree with the [personal data protection provisions](#)

EU bioeconomy strategy: objectives, opportunities and contribution to the EU's goals

***What should be the main objectives of the new EU bioeconomy strategy?**

The bioeconomy can contribute to the EU economy and society in many ways, for example related to its ability to increase competitiveness, sustainability, circularity, and resilience in the EU, against the background of global competition, while ensuring food security, employment and welfare.

Please, select which are in your view the **four** most relevant objectives.

The new EU bioeconomy strategy should focus on...

Maximum 4 selection(s)

- ...improving the position of the EU bioeconomy in the global competition
- ...strengthening the biotech and biomanufacturing sectors in the EU
- ...increasing circularity across bioeconomy value chains
- ...ensuring food security in the EU and promoting sustainable food systems in the EU
- ...improving the provision of renewable and affordable energy
- ...contributing to climate mitigation and adaptation

- ...fostering environmentally sustainable production, supply and use of biomass, in particular to halt biodiversity loss
- ...increasing employment possibilities in bioeconomy sectors
- ...ensuring income and welfare in the rural and remote areas of the EU
- ...protecting and restoring the ecosystems that provide services for people in the EU (e.g. clean air and water)

Please, specify any additional objectives that should be considered:

500 character(s) maximum

The EU bioeconomy strategy should focus on EU's competitiveness that breaks our dependency on fossil fuels, creates new jobs and boosts both the attractiveness and the sustainability of our rural areas. We propose three pathways: ensuring autonomy and civil preparedness; breaking away from fossil-based economy to a circular bioeconomy; creating new jobs and enhancing completeness and inclusion. In addition, governance and policy coherence and means of implementation.

***What should be the main areas of innovation and opportunity of the new EU bioeconomy strategy?**

The bioeconomy offers several opportunities and innovations and can create new business models.

Please, select which are in your view the **four** most relevant areas.

The new EU bioeconomy strategy should use the opportunities and innovation potential of:

Maximum 4 selection(s)

- Advancements in biotechnology and agriculture.** The development of new biotechnological capabilities can improve agricultural productivity, reduce dependency on chemical inputs, and increase crop resilience to climate change. Precision breeding, microbial solutions, and bio-based fertilisers are examples of innovations driving sustainable agricultural practices.
- Sectors beyond medicine and food.** While traditionally associated with pharmaceuticals and food production, the bioeconomy is expanding into multiple sectors, including textiles, construction and chemicals. This diversification opens new markets and reinforces economic resilience.

- Sustainable biomaterials as alternatives to plastics.** The emergence of bio-based materials offers viable alternatives to conventional plastics, reducing environmental pollution and dependency on fossil-based resources. Innovations in biopolymers contribute to the circular economy.
- Improved biofuels and sustainable energy solutions.** Advancements in biofuel technologies are increasing efficiency and sustainability, providing renewable energy options that can play a role in achieving the EU's decarbonisation goals. Bioenergy solutions contribute to energy security and a low-carbon economy.
- Market scale-up and economic growth.** The bioeconomy has the potential to scale up rapidly, creating new business opportunities and employment across various value chains. By investing in bio-based industries, the EU can strengthen global competitiveness and attract new investment.
- New sources of protein and sustainable and novel food systems.** Innovations in alternative proteins, including plant-based, microbial, and insect-based sources can enhance food security and reduce environmental impact.
- Investment in research and innovation.** Continuous investment in bioeconomy-related research and development is crucial to unlocking new solutions, improving efficiency, and addressing challenges such as resource scarcity and environmental degradation. Collaborative efforts between academia, industry, and policymakers can accelerate progress.

Please, specify any additional opportunities and innovations that should be considered:

500 character(s) maximum

Increase the funding for research in circular bioeconomy that improve resource efficiency and food security. Create clusters and networks consisting of companies, researchers, and experts to facilitate knowledge exchange and collaboration on circular bioeconomy. Facilitate the commercial development of biorefinery solutions refining crops, biomass, biomass waste and residue streams to high-value products, such as biofuels and biochemicals.

How should the EU bioeconomy strategy contribute to achieving the EU climate goals?

The EU is committed to cut greenhouse gas emissions by 55% by 2030 and to reach climate neutrality by 2050. To achieve these climate goals, we need to promote green transition in all our economic sectors and change production and consumption patterns.

The sustainable and circular bioeconomy can play a major role in achieving EU climate goals through various practices, measures and innovations.

Please, rank the below climate action pathways according to their relative importance.

In your opinion, the bioeconomy strategy should contribute to...

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* ...substituting fossil-based and energy-intensive raw materials by bio-based material, renewable resources and biomass	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...promoting innovations and biotechnology solutions with decarbonisation potential	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ... fostering resource efficiency and a circular economy approach across bioeconomy value chains	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...recovering and recycling organic waste and by-products as raw material for bio-based materials and products instead of using primary raw material	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...encouraging production and consumption towards bio-based products with longer lifetimes and reduced environmental impact. (e.g. wood in buildings and furniture)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...promoting sustainable consumption	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* ...improving the resilience and productivity of primary production, sustainable agricultural practices or carbon farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...supporting soil management practices, such as sequestering and storing carbon, improving the soil's capacity to retain water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...increasing carbon sinks in forests through sustainable afforestation and sustainable forest management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...increasing carbon sinks in marine the environment (e.g. by restoring seagrass and seaweed beds)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ... scaling up blue bioeconomy low carbon products (algae, molluscs) while removing excess carbon and nutrients from the marine environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...providing potential alternatives to animal protein such as plant- and microbial-based (e.g. fungi-and bacteria-based) protein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, specify any other significant ways in which the bioeconomy could contribute to EU climate objectives:

500 character(s) maximum

Climate benefits of forests. Take the substitution effect into account when revising the LULUCF regulation. Encourage active sustainable management in the forestry and agricultural sectors. No to legislating the cascading principle. Promote the full life cycle perspective including both forest and agriculture production and its products, with bioenergy, in climate evaluations. Adaptation and resilience. Provide economic incentives for climate adaptation in forests and agricultural land.

How should the EU bioeconomy strategy contribute to achieving the EU biodiversity goals?

The provision of biomass for the bioeconomy depends on the resilience and integrity of the ecosystems that generate biomass. The triple planetary crisis (biodiversity loss, pollution and climate change) and degraded ecosystems impact the variety and quantity of ecosystem services and biomass productivity, while demand for them is diversifying and intensifying in the EU and globally.

A sustainable and circular bioeconomy can help to reduce the pressure on ecosystems while ensuring alignment with the Kunming-Montreal Global Biodiversity Framework's targets for biodiversity protection and restoration. To do so, the bioeconomy should prioritise nature-based solutions that improve ecosystem services and support the EU biodiversity targets.

Please, rank according to their relative importance the below ways in which the strategy should contribute to achieving the EU biodiversity goals.

In your opinion, a bioeconomy that protects biodiversity should support...

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* ...land management practices, business models and value chains that prevent and reverse natural ecosystem degradation	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* ...farming practices and agricultural models that ensure environmentally sustainable biomass production	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...sustainable forest management practices that have a positive impact on biodiversity and nature, contributing to the resilience of forests against anthropic pressures and climate change	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...business models that continue and improve the provision of ecosystem services (clean air, soil retention, flood control, water purification and replenishment, biodiversity, carbon sequestration and storage, nature-based recreation)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...solutions to regenerate biological resources (e.g. bioremediation, depollution of brownfields for biomass production)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...resource efficiency, circularity and innovations across bioeconomy value chains to get more added value from fewer primary natural resources	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...use of organic waste and by-products instead of primary natural resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...adiversified, stable and fair income for primary producers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* ...locally adapted solutions and reorientation of traditional bioeconomy actors	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, identify any other significant ways the bioeconomy could contribute to EU biodiversity goals:

500 character(s) maximum

Layers of existing legislation under the Green Deal with biodiversity objectives hampers bioeconomy investments for farmers and forest owners. There is a need to develop a circular bioec. omnibus package for simplification, including EU deforestation regulation, RED III, ETD, Taxonomy, state aid regulations and other policies related to biodiversity and biomass (e.g., NRL and LULUCF). To promote carbon and nature credit initiative, it should be voluntary and build on market-based solutions.

The EU bioeconomy: barriers and risks impeding or slowing down its growth and potential measures to address them.

The EU bioeconomy faces multiple interconnected barriers that hinder or slow down its growth and development. The Commission has identified the below barriers based on studies, reports and workshops, and position papers and other contributions from stakeholders and Member States. The upcoming new EU bioeconomy strategy aims to tackle these barriers. The barriers have been divided into following subgroups:

- regulatory barriers
- financing barriers
- market barriers
- other barriers

Please, select the two barriers per subgroup that in your view are the most relevant ones.

Which of the following barriers hinder or slow down the most the growth of the EU bioeconomy?

* **Regulatory barriers**

Maximum 2 selection(s)

- Complex regulatory requirements and lack of harmonisation at the EU and national level for bio-based materials and products
- Lengthy and burdensome permitting and administrative procedures that are slowing down uptake of bio-based products
- Insufficient harmonisation of standards across the EU for bio-based products
- Lack of an updated regulatory framework for novel biotechnologies and innovations
- Insufficient guidance, capacity building and support for small to medium-sized Enterprises MEs and start-up at EU and national level
- Unfair competition of bio-based products with conventional fossil-based products (e.g. lack of a regulatory level playing field in the single market, insufficient regulatory incentives)
- Unclear or insufficient rules on what constitutes sustainable sourcing of biomass within the planetary boundaries
- Lack of synergies between EU, national and local strategies

* **Financing barriers**

Maximum 2 selection(s)

- Limited access to financing for investments in bio-based production and biomanufacturing due to risk factors
- Lack of an efficient EU capital market to finance start-ups and scale-ups
- Insufficient financial incentives and support for primary producers to engage in nature positive actions that ensure and contribute to ecosystem integrity and resilience for long-term sustainable supply of biomass and ecosystem services that increase the value of the bioeconomy (biodiversity investment gap)
- Insufficient research and development funding across the bioeconomy value chain
- Unfair competition of bio-based products with conventional fossil-based products (e.g. lacking regulatory level- laying field inn the single market, lacking regulatory incentives)

* **Market barriers**

Maximum 2 selection(s)

- Lack of demand for bio-based products
- Restrictions to bio-based products in comparison with fossil-based products due to several reasons (e.g. novelty, higher prices, lower scale)
- Lack of infrastructure for the processing of woody biomass for high-value applications
- Lack of infrastructure (e.g. recycling facilities, pilot facilities and equipment) for start-ups and scaleup and for recycling of organic waste
- Impacts on the availability of biomass for other applications of existing policies that prioritising biomass for energy
- Lack of strategies to increase the availability of sustainably sourced biomass and to ensure resilient supply chains for different uses of biological resources
- Uncertainty about the sufficiency of sustainably sourced biomass availability in the EU and globally

* **Other barriers**

Maximum 2 selection(s)

- Lack of education programmes on bioeconomy production methods, products and services.
- Lack of transparent and reliable information on the environmental and climate benefits and impacts on the bioeconomy of products and services

- Lack of skilled workforce on bioeconomy production methods, products and services
- Barriers specific to product groups (please, specify these groups in the below free text box)
- Limited consumer knowledge and acceptance of certain novel bioeconomy products and services
- Lack of awareness of the potential of the bioeconomy
- Limited use of artificial intelligence and other digital solutions and technologies to promote the uptake of the bioeconomy

Please, specify barriers to specific product groups

500 character(s) maximum

Agriculture and forest sectors are working with circularity and the use of residual flows, both with holding and contributing with resources to other businesses. Residual biomass could be valued even more as feedstock for high-value products by unlocking current bottlenecks; expensive logistics solutions; lack of developed recycling systems, making it profitable for concerned companies. Efficient use requires investment at farm level, forest industry plants and at the national and EU level.

Please, specify any additional barriers that should be considered:

1500 character(s) maximum

Recent geopolitical conflicts have underscored the importance of self-sufficiency and preparedness within the Union to ensure food security and autonomy as regards critical materials and energy. Our dependency of import is a barrier to fully taken into account in the EU bioeconomy strategy. It is of strategic importance to develop the conditions to strengthening the EU's global leadership in circular bioeconomy. Moreover, it is critical to develop tools to ensure policy coherence to foster synergies among relevant EU policies, as well as to handle bottle necks and trade-offs, both within and outside the Union. Some actions to tackle these barriers are:

-Encourage voluntary national circular bioeconomy strategy in Member States to further boost a growing circular bioeconomy at the national and sub-regional and local levels. Bottom up and fit for practice approaches.

-Improve Commission's impact assessments to better consider policy consistency between legal acts and strategies of relevance for circular bioeconomy. This could include specific guidance for analysing the potential of socio-economic impacts and their cumulative effect on land use, the supply of raw material and energy resources within the Better Regulation Package.

-Strengthen the work within European Union External Action by developing circular bioeconomy diplomacy to build strategic partnerships in emerging markets and in developing countries to unleash the full potential for circular bioeconomy globally.

If you have evidence to substantiate some of your answers above, please provide it below (e.g. via links) or upload it as a separate document:

500 character(s) maximum

Please, upload your file(s)

Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

Which of the below potential risks are relevant to the EU bioeconomy?

The growth of the EU bioeconomy may face, or even lead to, specific risks, such as deepening the potential gap between increasing demand of biomass and what can be sustainably harvested, as identified by some reports (e.g. the European Biomass Puzzle by the European Environmental Agency). This potential biomass gap can, in turn, result in difficulties in ensuring long-term competitiveness, lead to increased competition for land between different bioeconomy uses and endanger, for example, carbon sinks.

Other risks relate to a shortage or unstable supply of certain natural resources and raw materials due to climate change impacts, such as droughts, floods or forest fires. This question refers to the kind of strategic risks that affect whole societies, rather than just individual companies or other bioeconomy actors, such as farmers.

Please, assess the importance of the below potential related to the EU bioeconomy.

What is the relative importance of the following potential risks for the EU bioeconomy?

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Lack of stable supply of sustainably sourced biomass and competition for it between different uses, such as for food, materials, products, energy and ecosystem services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Societal concerns linked to the ethics and safety of biotechnologies and its solutions	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Loss of competitiveness of the sector due to an altering landscape and uncertain regulatory framework	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Spread of invasive species (e.g. blue crabs, round goby) competing with and harming local species traditionally used in bioeconomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Please, specify any additional risks that should be considered:

500 character(s) maximum

There is a risk that rural areas could fall behind if farmers, forest owners and rural communities are not given the appropriate tools, resources and economic incentives, including education and lifelong learning. Collaboration between actors is crucial for sharing solutions and best practices. Circular bioeconomy should be fully aligned with and contribute to 2030 Agenda and the principle of leaving no one behind.

Which measures would help to address the above barriers and to promote sustainability, circularity and competitiveness of the EU bioeconomy?

The upcoming new EU bioeconomy strategy aims to address the barriers, to the EU bioeconomy, to promote its sustainability, circularity and competitiveness, and to ensure a fair transition across EU at national, regional and local level.

Please, rank according to their relative importance the measures that, in your view, should be considered as part of the new EU bioeconomy strategy.

Regulatory and policy measures

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Simplify and speed up permitting procedures and biotech and biomanufacturing solutions	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Create regulatory sandboxes and/or pilot regulatory regimes for bio-based products and services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
* Improve policy consistency and harmonisation between EU and national regulations and reduce administrative burden	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Promote integrated territorial biomass strategies that take into account environmental, climate and anthropogenic risks to the biomass stock and balance ecosystem, climate adaptation/mitigation and biomass supply needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Introduce regulatory incentives such as mandatory bio-based content requirements (e.g. bio-based plastic in packaging) to promote biomaterials and bioproducts	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Develop sustainability criteria for biomass use beyond energy use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
* Improve monitoring and knowledge of the condition of biodiversity, ecosystems and ecosystem services and its uptake to underpin ecosystem conservation and restoration, secure long-term provision of biomass, and increase the value and the resilience of the bioeconomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Measures to engage with value chain actors

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Introduce platforms, networks or alliances to boost development and uptake of the bioeconomy and efficient implementation and achievement of the EU bioeconomy strategy's objectives	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Raise awareness of benefits and environmental impacts of bio-based materials and products compared to fossil-based ones	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Support public-private partnership programmes for biotech solutions, biomanufacturing and other bio-based products	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Introduce a support scheme for small to medium-sized enterprises, with grants to promote collaboration and the scaling-up of operations	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Develop education and training programmes to support reskilling and upskilling of workers in the bioeconomy, e.g. biotech and regenerative and circular business models	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Support involvement of primary producers in bioeconomy value chains and diversification of economic activities	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Support for regions and Member States to develop bioeconomy strategies and monitor progress	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Develop market opportunities in non-EU countries	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Promote global partnerships and cooperation for sustainable and circular bioeconomy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Funding and financing measures

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Develop and facilitate the uptake of sustainable financing tools, in particular private investments, that reward primary producers and landowners for environmentally sustainable biomass production, improving the resilience and integrity of ecosystems and the provision of ecosystem services (e.g. carbon/nature credits)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Finance more research and innovation to strengthen knowledge based on bioeconomy, including biomass supply and demand innovations	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Improve funding and capacity building for regions and Member States to scale-up bioeconomy innovation and allow the transition from laboratory to the market	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Support the uptake of innovative bio-based products and services (e.g. product-as-a-service applications for example related to fertilizers)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Incentivise data-driven approaches to the bioeconomy value chain: from satellite data for biomass production to new digital solutions in support of logistics, traceability, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, specify any additional policy measures that should be considered:

1500 character(s) maximum

Enhance and promote the New European Bauhaus initiative. Increase the share of wood construction in new buildings by 20% by 2040. Support the development of forest industry infrastructure and biorefineries to boost the use of forest-based residues and by-products as feedstock for biofuels, biojet fuels, maritime fuels, biochemicals, and more—contributing to fossil fuel replacement and improved energy security. Ensure a high increment in European forest growth and expand forest biomass feedstock production, while implementing effective measures to maintain and enhance biodiversity.

Conduct comprehensive greenhouse gas impact assessments, including full life cycle analyses, to evaluate the climate benefits of forest conservation versus the use of forest-based products. Apply a broad systems perspective in implementing the cascading principle, avoiding suballocation of biomass feedstocks and maximizing overall climate benefits.

The only EU definition of sustainable biofuels should be that in the Renewable Energy Directive (RED). All EU legislation and incentives must align with RED criteria and not discriminate against crop-based biofuels based on feedstock type.

Promote education and lifelong learning in the bioeconomy, including vocational training. Provide targeted training for farmers and forest owners on sustainable practices and circular business models, equipping them to contribute effectively to a growing bioeconomy.

Additional input

Please, specify any additional issues that should be raised:

1500 character(s) maximum

Bioenergy accounts for nearly 40% of Sweden's energy use, making it the largest energy source. It plays a key role in rural job creation, economic growth, energy security, and decarbonisation. At the EU level, bioenergy strengthens energy independence, supports rural economies, and fosters local employment.

Agriculture and forest-based sectors face limited electrification options compared to others. Given the long investment cycles for machinery, stable long-term regulations are essential. To accelerate investment, the EU block exemption regulation should be adapted to include biogas tractors and other heavy vehicles. Some Member States have already reported biogas and biogasol tax exemptions as state aid to the Commission.

Support investment in new HVO production capacity by transforming sawmills and pulp mills into biorefineries that valorize residues and by-products. Promote modern biorefineries that use crops to produce sustainable food and feed proteins, green chemicals, materials, CCS/CCU, and biofuels—reducing fossil energy and protein imports while strengthening farmer incomes and rural resilience.

Set clear targets for biogas, drop-in liquid biofuels, and bioenergy production to scale up investments. Develop new tax directives that support favorable energy taxation for all bioenergy types, including crop-based biofuels.

You are welcome to upload a position paper on bioeconomy with possible recommendations on specific issues here (three pages maximum).

Please, upload your file(s)

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