



*European Economic and Social Committee*

**CCMI/160**

**Opportunities for a sustainable EU bio-economy**

## **OPINION**

European Economic and Social Committee

**Sustainable inclusive bio-economy – new opportunities for European economy**

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Outcome of vote (for/against/abstentions)	205/3/3

## 1. **Conclusions and recommendations**

- 1.1 **Introduce a long-term, coherent and transparent policy and incentive framework to promote the bioeconomy.** A high-political engagement to address the many cross-cutting societal challenges is needed and the EU policy environment could be more welcoming towards innovative bio-based products and sustainably produced EU-grown raw materials. Financial incentives or tax incentives could help spur on the necessary investments as Member States and regions have competence in these domains rather than the EU. Cluster organisations grouping SMEs, as well as primary producers of sustainable biomass, play an essential part in developing relationships between actors in the supply chain. A continued, updated mapping exercise<sup>1</sup>, coupled with measuring the effects of the bioeconomy, could identify existing clusters active in the bio-based area, and actions should be taken to facilitate the development of new ones at European, regional and national levels, where gaps exist.
- 1.2 **The role of farmers, forest owners and their cooperatives is crucial to ensure an efficient use of natural resources and contribute to a circular bioeconomy.** A strong Multiannual Financial Framework, Common Agricultural Policy and European forest strategy are needed to support advisory services, training and knowledge exchange, to better address farmers' and agri-cooperatives' needs. Concrete examples to raise awareness and show the benefits of the bioeconomy for the whole value chain need to be promoted. That will attract young farmers and new entrants to start new businesses in this field. Producers' organisations and cooperatives should also be promoted as important tools to increase the mobilisation and added value of existing biomass in EU. Therefore, supporting the EU agriculture and forestry sectors is crucial to further invest and innovate in the sustainable production of biomass.
- 1.3 **Support market creation and help consumers and the public to make informed choices about the products and industries they support through their daily purchases.** To bridge the lack of awareness of consumers and broadcast coherent and accurate messages on bio-based products, the European Union needs to design a communication strategy involving all partners in the value chain and all other stakeholders. An important first step has been the establishment of clear EU-wide standards for bio-based products, which can pave the way for introducing market creation measures to further boost consumers' and public procurers' uptake of EU-produced bio-based products.
- 1.4 **Provide a sustainable financial return on investments through a one-stop-shop fund.** Smart regulation and consistent multi-level implementation across the EU should be a priority in order to remove obstacles and reduce administrative burden while at the same time securing sustainability. For instance, a web-based tool could help identify available funding and whether the applicant meets the eligibility criteria for this mechanism. The system would also provide the links and resources needed to apply directly for the funding mechanism. It could serve as a market place, making information on funding available and putting fund seekers in contact with potential funders (e.g. like a crowdfunding site). Further, the continuation of the Bio-based Industries Joint Undertaking (BBI JU 2.0) beyond the current multi-annual financial framework is crucial, to foster new and existing value chains of bio-based products and strengthen the

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<sup>1</sup> <https://biconsortium.eu/news/mapping-european-biorefineries>

competitiveness of existing production facilities, and for contributing to rural development, creating jobs and promoting business.

- 1.5 **The EU Regional Development Policy post 2020 should provide enough funds to further develop rural areas.** The focus should be mainly on supporting investments in infrastructure and services needed for efficient and sustainable rural bio-economy business.
- 1.6 **Capitalise on scientific opportunities and support the uptake of innovations through a flexible, proportionate, robust legal framework.** Research is critical to enable, establish and evaluate innovation in the bioeconomy. Commercial exploitation depends not only on excellent research but also on the appropriate strategic, legal and societal framework to ensure fast knowledge transfer to industry. Frontrunners should receive the space and support needed to innovate and accelerate within regulatory boundaries. Innovation deals and green deals should be agreed upon with stakeholders in situations where regulation could better support the development of the overall bioeconomy and where creative solutions are needed. Furthermore, innovation also plays a crucial role in enhancing the sustainability of the EU biomass production.
- 1.7 **Enhance education, training and skills programmes for new talent and existing employees.** Unlocking the bioeconomy potential could lead to creating new jobs. Yet, the introduction of new technologies poses important challenges to the organisation of work and the skills workers need. Therefore, ensuring the continued development and adaptation of individuals' skills over their lifetimes is of the utmost importance. Commitment from all relevant stakeholders – biomass producers, education providers, companies, trade unions, public employment services and governments – to improving the quality and responsiveness of education and vocational training provision is paramount for reducing the skills mismatch by reinforcing links between education systems and labour markets. However, overall skills development and matching policies should be an integral part of a broader set of actions that include employment, industrial, investment, innovation and environmental policies.
- 1.8 **Explore biomass usage. A more efficient use of the existing biomass supply must be a priority to meet the growing demand for feedstock.** Then, the quality and quantity of productive soils must also be improved for agriculture and the use of abandoned, marginal or underutilised land incentivised. Feedstock producers, mainly farmers and forest owners, play a vital role in developing the bioeconomy. Awareness raising of potential opportunities (using different crops) and the development of infrastructure for collection, storage and transportation of biomass is required. Making sustainability reporting schemes less complex and enhancing versatile biomass production and processing capacity can also play a key role. Wastes and residues as alternative biomass sources and the sustainable management of European forests offer opportunities for the bioeconomy and the bioenergy. A valuation of sustainable waste flows is needed as well as further investments in wood and residues mobilisation. In addition, technologies need to be developed to deal with the inherent variability of such products. In some cases, national policies may need to adapt to accommodate usage of wastes in bio-based products.

## 2. General comments

- 2.1 The bioeconomy encompasses the production of renewable biological resources and their conversion into food, feed, bio-based products and bioenergy. This includes agriculture, forestry, fisheries, food, pulp and paper production, as well as parts of chemical, biotechnological and energy industries. For the purpose of this opinion, research on genomes, cell processes and bioinformatics is not specifically considered. The 2012 EU Bioeconomy Strategy aimed "(...) to pave the way to a more innovative, resource-efficient and competitive society that reconciles food security with the sustainable use of renewable resources for industrial purposes, while ensuring environmental protection". In 2017 the Commission carried out a review of its 2012 EU Bioeconomy Strategy, which concluded that the Strategy has demonstrated the relevance of its objectives and that the importance of the opportunities offered by the bioeconomy is increasingly recognised in Europe and beyond.
- 2.2 Nevertheless, while the objectives of the 2012 EU Bioeconomy Strategy continue to be relevant to meet the challenges in food and nutrition security, and the accompanying Action Plan has delivered on its proposed objectives, a refocusing of the actions and assessment of the scope of the Strategy are considered necessary in light of recent policy developments, including the United Nations Sustainable Development Goals (SDGs) and Convention on Climate Change (COP21 commitments). The global population is expected to grow to almost 10 billion by 2050 and biological resources need to be used more efficiently, so there can be safe, nutritious, high quality and affordable food for more people with less environmental and climate impact per unit produced, and sufficient renewable biological material to produce a sizeable part of what we currently harness from fossil crude oil, in conjunction with wind, solar and other renewable energies.
- 2.3 Against this backdrop, the sustainable bioeconomy cuts across sectors, and is at the core of sustainable economic strategies worldwide. The bioeconomy can play a key role in European competitiveness and it is now important to identify and use its opportunities, both at European and Member States/regional level. For example, other third countries such as the USA have experienced top-down leadership on the development of a bioeconomy generating almost USD 400 billion and supporting over four million jobs through direct, indirect, and induced contributions<sup>2</sup>.
- 2.4 The bioeconomy provides options that can both help reduce CO<sub>2</sub> emissions and reduce reliance on imported fossil resources. For example, EU forests sequester an amount of carbon corresponding to 10% of the EU's yearly emissions, while providing a sustainable and constant supply of biomass for renewable energy. Furthermore, estimates show that 100 000 chemicals currently in production can, in theory, be sourced from renewable raw materials. This does not mean all of them should be, but it is theoretically possible. This will not only offer the possibility of producing our everyday household items locally and renewably, it will also help create jobs and growth in Europe, where the technological edge still remains strong.

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<sup>2</sup> See the USDA's Fact Sheet: An Economic Impact Analysis of the U.S. Biobased Products Industry: 2016 Update at: <https://www.biopreferred.gov/BPResources/files/BiobasedProductsEconomicAnalysis2016FS.pdf>.

2.5 However, major barriers remain on the path towards greater innovation within the EU bioeconomy. An important obstacle relates to product cost-competitiveness, both compared to fossil alternatives and to equivalent products from elsewhere in the world. Cost-competitiveness is affected by many factors, including technology readiness level, labour costs, fossil fuel subsidies and amortisation, as well as the low level of market support for bio-based products. This competitiveness issue is compounded by difficulties in accessing finance for innovative projects and production facilities and, often, ongoing low end-user awareness of bio-based products, as well as by a lack of skills and operational relationships to drive the sector forward. Moreover, permitting procedures for new bio-based projects are becoming lengthy and burdensome leading to significant legal uncertainties and financial risks for economic actors.

### 3. Specific comments

3.1 It is estimated that the bioeconomy sectors in the EU have an annual turnover of about EUR 2 trillion and employ about 19.5 million people<sup>3</sup>, most of them located in rural and coastal areas, representing about 8.5% of the EU28's workforce. Agriculture, forest-based sector and rural communities are expected to benefit from the developing bio-based sector across the EU in the form of employment and income generation. Processing biomass and manufacturing bio-based products provide new business opportunities in the form of growing and marketing diverse crops. Together with conventional crops like cereals, oilseeds, potatoes and sugar beet, novel crops such as grass, forest-based crops, seaweed and microalgae are regarded as potential future income generators in rural and coastal areas.

3.2 Existing biorefineries already now provide livelihoods and economic empowerment to rural families and communities. Biorefineries – factories that use renewable raw materials (i.e. biomass, by-products and co-products as well as waste) instead of fossil resources are at the heart of the bioeconomy: they are located in rural and coastal areas, close to the renewable raw materials they process, in the heart of food and feed, industrial, wood and energy production.

3.3 Biorefineries enhance every component of the plant they process, producing minimal waste. Through efficient and/or innovative technologies, biorefineries based in the EU manufacture a wide array of products such as food, feed, chemicals, fibres and fuels which combine the features of being renewable, reusable, recyclable, compostable or biodegradable. The versatility of bio-based products and ingredients is such that they can be used in a wide variety of applications, such as aquafeed, construction, cosmetics, cardboard, detergents, fuels, lubricants, paint, paper, pharmaceuticals, plastics, and other industrial products, thereby substituting fossil-based ingredients with renewable ones.

3.4 The establishment of new biorefineries, development and expansion of existing biorefineries, is an investment in a first-of-a-kind plant. Biorefineries are capital-intensive, have long payback times and are exposed to technology and market risks. Therefore, a clear, stable and supportive regulatory and financial framework is important to foster these investments in Europe. Today a variety of different instruments can be accessed including Horizon 2020 (the new proposed

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<sup>3</sup> All quoted figures are sourced from "JRC science for policy report: 2016 Bioeconomy Report", available at <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC103138/kjna28468enn.pdf>.

Horizon Europe legislation is a welcomed, ambitious innovation and research programme) and the Bio-based Industries Joint Undertaking; European Structural and Investment Funds (ESIF); the European Agricultural Fund for Rural Development (EAFRD); InnovFin; the European Fund for Strategic Investments (EFSI); and last but not least the European Investment Bank (EIB) for loans and guarantees. But accessing them can be difficult. A one-stop-shop for companies to access in-depth tailor-made information fitting their needs would address these bottlenecks.

- 3.5 In this context, engaging with civil society, together with farmers, forest owners and industry, to encourage the debate on shaping a more competitive bioeconomy for Europe that benefits all is critically needed. Helping to communicate the benefits of the bioeconomy is crucial to achieve this paradigm shift towards a lower-carbon renewable-based economy. In this regard, credible certification and labels schemes could be important tools to bring about a sustainable and reliable bioeconomy industry, and give confidence to industrial customers, public procurers and consumers.
- 3.6 The EU, Member States and regional authorities can make crucial contributions to help the bioeconomy grow, by stimulating market demand for renewable, smart and resource-efficient products and services. Member States should include in the future CAP strategic plans concrete measures to develop and/or further support investments and promote sustainable solutions for EU farmers, forest owners and their cooperatives to increase their competitiveness and efficiency. Where there is a potential for bio-based products to substitute fossil-carbon alternatives sustainably, this could be enabled both through the development of new legislation, such as the circular economy package, and through the potential revision of other relevant existing legislation to encourage substitution of locally produced bio-based alternatives to traditional fossil carbon products. Further, existing standardisation activities such as the TC411 and existing certification schemes and/or new voluntary labelling schemes such as the biobased% can be used.
- 3.7 Public procurers at national and regional levels should increase references to such credible bio-based content certification and labels. For instance, in 2016, the Dutch Standardisation Body NEN launched a new bio-based certification scheme, Biobased% (<http://www.biobasedcontent.eu/>). It establishes the amount of biomass that is contained in a product, and helps companies to provide transparent and credible information about the bio-based content of a product, both in business to business as well as in business to consumer communications. It is based on the European Standard EN 16785-1:2015 (providing a method for determining the bio-based content of solid, liquid and gaseous products using radiocarbon analysis and elemental analyses). Conformity assessments are carried out by certification bodies who have entered into an agreement with NEN. Now that this certification is in place, it is important to raise awareness and incentivise the use of renewable raw materials in current and future EU legislation.
- 3.8 In forestry, certification schemes play an important role for guaranteeing a sustainable mobilisation of biomass. For instance, 60% of the EU's forests are certified under the Programme for the Endorsement of Forest Certification (PEFC) and/ or Forest Stewardship Council (FSC) scheme. Furthermore, EU forestry is producing under the highest environmental

standards worldwide, originating from legislation such as the EU Timber Regulation, rules on land use, land-use change and forestry (LULUCF), the Birds and Habitats Directives and the circular economy package.

- 3.9 Improving B2B and B2C communication is therefore key. Raising public awareness based on accurate, relevant and accessible information is essential to ensure the development of a smart, sustainable and inclusive bioeconomy, to create a market for sustainable bio-based products and to promote more sustainable consumption and production. Public awareness actions are needed particularly at regional and local level, including prizes or awards as well as exhibitions on the role of technology and science in the bioeconomy.
- 3.10 It is thus of great importance to create clear and accurate messages for the public. As the bioeconomy offers several opportunities to address societal challenges, measuring it through a comprehensive economic assessment is required. This will provide information about the size of the bioeconomy cutting across sectors, as well as its contribution to economic growth and related labour market effects. In this regard the scientific community has a pivotal role to play. This is also why it is essential to sustain investment in interdisciplinary and basic research for the EU to fulfil its potential in contributing to global research and innovation for food and nutrition security, for competitiveness and the knowledge-based bioeconomy. It is vital that the EU legislative position is fully informed by the advancing scientific evidence and experience worldwide and that the processes for deciding on regulatory oversight are transparent.
- 3.11 Educating school children and high school students is crucial to raise a generation that understands the challenges and embraces the opportunities offered by the bioeconomy. For example, teaching principles of circularity, of acting globally and locally at the same time (glocally), and raising interest for exploration will contribute to preparing the new generation to find its way. New curricula have already been designed at universities, combining life sciences, engineering and marketing, for instance. Such cross-overs between disciplines and a facilitating environment for start-ups can support students to become bioeconomy entrepreneurs. Vocational training needs to evolve to match requirements for skills in primary production, manufacturing, transport, and other relevant sectors. Also, later in life, workers need to update their skills and competences. Life-long learning programmes that connect education providers with producers, employers and workers, researchers, and innovators can support this.

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The president of the European Economic and Social Committee

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