# Contribution to the public consultation on the upcoming EU Bioeconomy strategy

## Executive Summary

Europe's ambition for open strategic autonomy calls for the efficient, innovative, circular and sustainable use of bio-based raw materials. To fully leverage this opportunity, the EU and its Member States must co-develop policy instruments to mobilize investments, reduce unnecessary regulatory barriers, support interdisciplinary research, development and innovation, as well as develop markets for bio-based products and services. This policy brief outlines recommendations under the four strategic pillars and one cross-cutting theme, as set out to guide the 2025 update of the EU Bioeconomy Strategy. These recommendations aim to create a circular, resilient, and globally competitive European bioeconomy, which preserves ecosystems. A sustainable, circular, innovative, and market-oriented bioeconomy will increase the EU's global competitiveness and productivity, promote value-added products and services, and enable the green transition.

### 1. A Circular and Resource-Efficient Bioeconomy – More Value from Less Resources

**Support policy coherence.** To fully realize the potential of a circular and resource-efficient bioeconomy, the EU must ensure better coordination of a bioeconomy policy framework approach at EU and national level. Integration of sustainability and socio-economic development goals into bioeconomy strategic development should build on, and further refine, the commonly agreed guiding principles, such as food first, cascading use and precautionary aligned with EU, national and regional envisioning. In doing so, the EU must also recognise the increasingly global nature of bioeconomy markets, ensuring that strategic development both leverages sustainable European solutions and safeguards against unintended environmental, social, and economic consequences arising from shifts in global supply chains.

**Align with existing initiatives.** This framework approach should be rooted in the Circular by design principle (ESPR), aligned with EU taxonomy criteria, supported by the Agricultural Knowledge and Innovation Systems (AKIS) and cooperation (EIP-AGRI), ensuring that investments in bio-based sectors contribute positively to environmental, climate and social objectives. To develop policy coherence at EU and national level and drive systemic transformation, bioeconomy strategic development needs to align with the key underlying EU initiatives - such as the European Green Deal, Clean Industrial Deal, Life Science Strategy, Vision for Agriculture and Food, and advancements in Biotechnology and Biomanufacturing, as well as the future Common Agricultural Policy.

**Integrate technologies.** Transition to more sustainable consumption practices, which includes accelerated demand for bio-based alternatives is crucial. In this respect, the EU should promote integration of bio-based technologies and

materials in key sectors such as agri-food, construction, textiles, and renewable energy. Biomass, derived from forest, agriculture and aquatic systems, residual biomass and biogenic carbon**, o**ffer sustainable alternatives to fossil-based raw materials and geou the production of more functional, value-added products.

**Develop Strategic Research Development and Innovation (RDI) frameworks** to better align national and EU bioeconomy RDI investments. Stronger ambition is needed at both national and EU level to coordinate RDI priorities, to boost investments in research infrastructure, sustainable and circular production of biomass, biorefinery, technological carbon sinks and biogenic $CO_2$ utilization and storage infrastructure. This will be critical to maximizing the climate benefits of bio-based production systems.

**Develop integrated rural and regional policy approaches** to accelerate optimal allocation and cascading use of bio-based raw materials appropriate to regional circumstances. By creating bio-industrial ecosystems including clusters and operational groups involving primary producers that facilitate the efficient use of all biomass components - including side streams and residues - the EU can support increased value generation, reduced waste, and enhanced circularity.

**Align definitions and standards.** To enhance EU-wide competitiveness and market accessibility for bio-based products using secondary biomass as raw material, it is crucial to acknowledge and address the varying legal definitions and regulations across different EU member states. Doing so ensures that business models converting biomass side streams into resources are not only technically and economically viable but also legally coherent across the entire supply chain. Prioritizing the harmonization of these legally binding definitions, wherever feasible, will support a truly integrated European bioeconomy.

## 2. From Lab to Fab – Priorities for Scaling Up

**Integrate bioeconomy into European industrial policy.** The transition from research and innovation to industrial application is essential for building a strong and competitive bioeconomy. To achieve this, the bioeconomy must be fully integrated into European industrial policy. This includes closing the innovation gap in bioeconomy by further strengthening the links between research, commercialization, and policy planning and by outlining a clear pathway from RDI, piloting and demonstration, scaling up through to market maturity.

**Set targets and follow-up implementation.** The EU should unlock the potentials and establish and implement ambitious targets for high-value forest-, agri-food, and blue bio-based products and materials in the internal market by 2040. This includes next-generation bio-based materials and e-fuels made from renewable hydrogen and biogenic carbon, which offer both environmental and strategic benefits. EU policies and regulations must also explicitly acknowledge the substitution impact of bio-based products in replacing fossil-based alternatives, thereby incentivizing sustainable innovation.

**Develop cross-cutting policies.** To accelerate deployment, Europe and its Member States need to do more to develop market push, pull, and cross-cutting policies. This would include building on current technology push incentives such as the Circular Biobased Europe Joint Undertaking for scaling up, out, and national and regional uptake of bio-based innovations and solutions. This entails providing financial incentives and subsidies to build infrastructure, pilot and scale new technologies, and facilitate the market entry of high added-value bio-based products.

**Incorporate environmental benefits into existing frameworks**. Bio-based products with verified environmental, biodiversity and climate benefits should be recognized within existing nature and carbon pricing schemes and offset mechanisms. Incorporating their nature benefits and carbon sequestration potential into these systems will create stronger economic linkages and enhance investment attractiveness.

## 3. Securing Sustainably Sourced Biomass Supply

**Diversify agriculture and forest management.** A resilient bioeconomy relies on a steady and sustainable supply of biomass. To ensure long-term feedstock availability, EU and national policies must support diversified agriculture and

forest management practices that protect food security and improve growth, enhance climate resilience, and protect biodiversity. To ensure circularity and enhance the use of primary and secondary biomass, the local development of agriculture and forest should be integrated with local biorefinery development to capture value locally through appropriate local bioprocessing and biomanufacturing. Particular attention should be paid to the cost efficiency of these processes and a fair inclusion of primary producers in newly developed bio-based value chains and business models.

**Utilize big data.** The EU should accelerate the use of predictive tools that leverage big data and remote sensing to forecast trends identify optimal management strategies. Greater focus is also needed on ensuring effective, consistent implementation across Member States and regional authorities. These models should also underpin early warning systems to detect vulnerabilities to climate-related stresses, pests, and diseases, allowing for timely adaptation measures. In parallel, investment in coordinated EU-level breeding programmes is essential to develop more climate-resilient crops and forest species, ensuring that forecasting and management tools are matched with robust, adapted biological material.

**Invest in innovative technologies in agriculture.** This is critical to developing diversified crops and livestock systems that are resilient, and efficient in nutrient use. Comprehensive and mutually reinforcing application of these innovative technologies can support breeding programs aimed at improving nutritional quality, productivity, sustainability, suitability for biorefining and resistance to environmental stresses.

**Develop proactive strategies.** Policy development must consider the growing impact of climate change, often accompanied by political instability, even armed conflicts and security risks are driving a global shift in food and biomass production towards Northern Europe. The EU must respond with proactive strategies to manage land use, supply chains, and rural and regional development in this changing context.

## 4. A Globally Competitive European Bioeconomy Sector

**Reinforce bioeconomy's position**. To compete globally, the European bioeconomy must be underpinned by a strong industrial base that includes cooperation with primary producers, a more transparent and unified regulatory framework, and the development of the market both internally and externally for bio-based products and services. This requires reinforcing the bioeconomy's position within EU industrial and food policy and ensuring that biomass sourcing, processing, product, and market development is both socially acceptable and economically competitive with a high level of environmental and climate performance, without increasing EU's dependence from imported inputs.

**Harmonise carbon certification standards.** To accelerate sustainable consumption and strengthen consumers' trust, action is required to develop harmonised national and EU standards, certification and labelling framework on environment and climate performance of bio-based products. In order to ensure fair competition and incentivize sustainable global production practices, further steps are needed to ensure that imported products meet the same environmental standards as EU-produced goods.

**Create attractive investment environment** for bio-based industries by reducing regulatory uncertainty and offering targeted financial instruments (e.g., blended finance, time-bound taxation, Public Private Partnerships). These should support not only early-stage innovation and entrepreneurship but also large-scale deployment and market development and expansion.

## Cross-Cutting Theme: Competitiveness and Fair Transition

**Adjust focus on long-term competitiveness.** The EU's Multiannual Financial Framework must be recalibrated to focus on long-term competitiveness. The Framework should consider channelling stronger resources into strategic investments in infrastructure, innovation, and skills development. The Important Projects of Common European Interest (IPCEI) should identify bioeconomy and related enabling technologies including biotechnology as a priority making it possible to bring together knowledge, expertise, financial resources, and economic actors throughout the Union and create positive spill-over effects.

**Promote multi-use of ecosystems**. Competitiveness and particularly productivity must go together with social inclusion, regional cohesion and equity, rural development and environmental and climate stewardship. A successful bioeconomy will require coherent EU-wide policies that support the sustainable and balanced multi-use of natural habitats, enabling conservation, recreation and economic activities to coexist without comprising ecological integrity. Clear frameworks for managing trade-offs and promoting nature-based solutions will be critical to achieving these outcomes.

**Promote fair, circular, sustainable and regionally integrated biobased value chains** that support rural, coastal and regional and city economies, enhance local wellbeing, and foster business models based on a just transition, digitalization, data services, and ecosystem knowledge.

**Consider biodiversity as a source of innovation** and ecosystem services, not only as a conservation goal. Healthy ecosystems form the basis for nature-based solutions and the development of new markets for ecosystem services, which can drive growth while delivering environmental benefits.

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