



## Position Paper

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### **Bioeconomy's potential to mitigate climate change**

Plants, such as trees, crops and algae rely on photosynthesis – a natural process that inherently removes carbon dioxide from the atmosphere and releases oxygen – to grow. This comes in addition to the multiple benefits that the vegetation that grows in terrestrial and marine ecosystems also provide, e.g. reduce erosion, protect soils. When managed sustainably, these ecosystems can provide feedstocks that combine a lot of positive features for the environment: renewability, recyclability, biodegradability and compostability. These assets make plants a unique resource to sustain life on earth.

The bioeconomy encompasses the sustainable production of renewable resources and their conversion into food, feed, fibres, materials, chemicals and bioenergy through efficient and/or innovative technologies. It builds on the characteristics of plants to propose a promising alternative to an economy that has growingly been relying on resources of fossil origin.

#### **Exposing the climate benefits of the bioeconomy**

When promoting the development of the bioeconomy as an alternative to the fossil-based economy, policy makers do not only consider a possible solution to the challenge of depleting non-renewable resources, they also foresee a critical contribution to achieving the global climate commitments, while maintaining or enhancing the quality of life. According to OECD *“the full climate change mitigation potential of biotechnology processes and bio-based products ranges from between 1 billion and 2.5 billion tons CO<sub>2</sub> equivalent per year by 2030”*<sup>1</sup>.

The contribution of the bioeconomy and bio-based products to climate change are multifold:

- Bioeconomy can boost mitigation actions of the agriculture and forestry sectors with sustainable intensification and growth and at the same time support climate adaptation.
- Plants as carbon sink: oceans, soils and plants are capturing CO<sub>2</sub> and acting as a sink as long as they are not disturbed or harvested. When above-ground vegetation is managed sustainably, through replanting or regeneration, the sink effect can be maintained or even enhanced.
- Bio-based products as carbon storage: the biomass from plants used to manufacture products that can be used over a certain period of time, re-used and even recycled further, stores the carbon dioxide and, at the same time, contributes to the circular economy.
- Biogenic carbon: for some durable bio-based products, the carbon uptake of the plants will outweigh the greenhouse gas emitted during the agricultural and manufacturing phases.
- Avoided emissions thanks to substitution: bio-based products very often replace existing fossil-based ingredients and products that are net emitters of CO<sub>2</sub> in the atmosphere. From

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<sup>1</sup> OECD, Industrial biotechnology and climate change, opportunities and challenges, 2011

the biomass replacing coal or oil for energy until the most advanced biomaterials replacing minerals and oil-based materials, via the biotechnologies supporting the development of bio-based products and the smartest use of waste, the bioeconomy allows for the massive avoidance of greenhouse gases emissions.

## Policy recommendations

Factoring the climate risks if global temperatures exceed 1.5°C, the EU should consider the climate mitigation potential of the bioeconomy when implementing the Paris agreement. The European bioeconomy and related sectors have the potential to help reduce the greenhouse gases in the atmosphere by 1 to 2.5 billion tons CO<sub>2</sub> equivalent per year over the coming decade, provided that the EU puts in place the necessary measures:

- Adopting stable, predictable and enabling climate and energy policies that acknowledge the positive contribution of bio-based products and processes to the climate commitments, while fostering innovation.
- Ensuring the necessary flexibility to Member States and regions to better improve efficiency of their biomass resources and sustainably intensify their use.
- Securing the long term carbon neutrality of sustainably grown, mobilised and re-grown biomass, when used to replace fossil-based products and energy
- Better accounting for the climate benefits of the bioeconomy leading to avoiding emissions that would otherwise have taken place
- Ensuring the competitiveness of bio-based sectors, in particular when they are exposed to global competition and /or market distorting measures
- Promoting further research and innovation in fields that would benefit the global climate, such as bio-based products
- Boosting the uptake of biomaterials and bio-based products in all economic sectors in order to achieve a low-carbon economy.
- Providing the adequate financial tools to improve the resilience of forests and agriculture and better adapt to climate change.

Members of the European Bioeconomy Alliance:		
<b>Starch Europe</b> European Starch Industry Association	<b>EuropaBio</b> The European Association for Bioindustries	<b>CEPI</b> Confederation of European Paper Industries
<b>PFPP</b> Primary Food Processors	<b>EUBP</b> European Bioplastics	<b>CEPF</b> Confederation of European Forest Owners
<b>FTP</b> Forest-based Sector Technology Platform	<b>ePURE</b> European Renewable Ethanol Producers Association	<b>CEFS</b> European Association of Sugar Producers
<b>FEDIOL</b> The EU Vegetable Oil & Proteinmeal Industry	<b>COPA-COGECA</b> European Farmers and European Agri-Cooperatives	<b>BIC</b> Bio-based Industries Consortium