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JOINT PRESS RELEASE

Agriculture and Bioeconomy: New Report Confirms Benefits of Using First-Generation Biomass for Food, Fuels and Chemicals in Europe

Hürth, 01 October 2025: Using first-generation agricultural biomass, i.e. crops like cereals, sugar and oil plants, to produce bio-based energy and materials in Europe results in important benefits for food security, biodiversity, agriculture and climate-change mitigation, according to a new expert paper from the nova-Institute think tank.

Europe's bioeconomy – which produces renewable, non-fossil-based materials and energy solutions from biomass – is soon to be the focus of a new EU strategy aimed at boosting Europe's autonomy and competitiveness while reducing its reliance on fossil-based resources. The new study from the nova-Institute confirms that the EU has the biomass resources necessary to realise the strategy, and dispels myths about the use of first-generation agricultural biomass, such as starch, sugar and oilseed crops.

"Despite widespread concern and frequent policy pushback against the use of first-generation biomass for industrial applications, often originating from concerns of undermining food security, scientific evidence suggests that these concerns are largely misplaced," the report states. "The debate is shaped by emotional and political arguments rather than robust data or a comprehensive understanding of the global food system."

The new research highlights four key benefits to the EU from the use of biomass including food crops for non-food applications such as fuels, chemicals and materials:

- **Enhancing a resilient and competitive EU agriculture:** Selling crops to multiple markets gives farmers greater flexibility and reduces their vulnerability to price fluctuations in any single sector; it also encourages investment in innovation and sustainable practices, as farmers can diversify their income and adapt to changes in the market.
- **Increased food security:** Using first-generation biomass for non-food applications strengthens food security in several important ways. This includes improved market stability through delivering protein-rich by-products, providing good availability of food crops and long-term scalability for starch, sugar and oil crops in the EU, all while providing an emergency food reserve in times of crisis.
- **Supporting climate change mitigation:** In order to defossilise European industry – critical for net-zero targets in chemical and fuel sectors – the use of first-generation biomass is indispensable. Although second-generation biomass is widely accepted, first-generation biomass can usually be produced at lower cost and scaled up more easily and significantly.

- **Supporting biodiversity protection:** Food crops are the most efficient use of land for producing starch, sugar and plant oils; maximising the productivity of each hectare reduces the total land area required for agriculture, leaving more space for nature and biodiversity protection.

The study also considers the potential impact of shifting only to second-generation sugars (meaning sugar from lignocellulose) instead of using first-generation biomass: First, the same amount of fermentable sugars for the biorefinery would require multiple times the amount of land; second, there would be less protein supply as important by-product of 1G non-food production; third, the emergency reserve of first-generation crops (starch, sugar and plant oils) for food crises would be lost, as second-generation crops cannot provide food by definition; and finally, even with 1G sugar prices, biorefineries and bio-based chemicals and derived materials can hardly compete with fossil solutions; with 2G sugars being two to three times more expensive, any relevant scaling up for defossilisation is impossible.

The nova-Institute report was commissioned by the European Bioeconomy Alliance, a multistakeholder, cross-sector platform dedicated to mainstreaming the bioeconomy and achieving its full potential in Europe.

Read the full report [here](#).

ABOUT EUROPEAN BIOECONOMY ALLIANCE

The European Bioeconomy Alliance (EUBA) is an alliance of leading European organisations representing sectors active in the bioeconomy – agriculture, forestry, biotechnology, sugar, starch, vegetable oils, pulp and paper, bioplastics, renewable ethanol, and research & innovation.

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nova-Institut GmbH has been working in the field of sustainability since the mid-1990s and focuses today primarily on the topic of renewable carbon cycles (recycling, bioeconomy and CO₂ utilisation/CCU).

As an independent research institute, **nova** supports in particular customers in chemical, plastics and materials industries with the transformation from fossil to renewable carbon from biomass, direct CO₂ utilisation and recycling.

Both in the accompanying research of international innovation projects and in individual, scientifically based management consulting, a multidisciplinary team of scientists at **nova** deals with the entire range of topics from renewable raw materials, technologies and markets, economics, political framework conditions, life cycle assessments and sustainability to communication, target groups and strategy development.

50 experts from various disciplines are working together on the defossilisation of the industry and for a climate neutral future. More information at: nova-institute.eu – renewable-carbon.eu

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