Position Paper by EERA Bioenergy on the European Commission's Public Consultation on the Future EU Bioeconomy Strategy

(23rd June 2025)

EERA Bioenergy, the Joint Programme of the European Energy Research Alliance (EERA) dedicated to strategic research, innovation and technological integration of sustainable bioenergy in Europe, welcomes the European Commission's initiative to revise and reinforce its Bioeconomy Strategy. We advocate for a stronger recognition of **bioenergy** as a cornerstone of the EU's circular, regenerative, and competitive bioeconomy, due to its key role in decarbonisation, energy resilience, and industrial innovation.

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1. Bioenergy: A Strategic Vector for the Bioeconomy

Bioenergy systems — including solid biomass, biogas, biomethane, and advanced liquid biofuels — provide flexible, dispatchable, and renewable energy services. They contribute directly to achieving EU objectives on climate neutrality, rural development, energy independence, and waste valorisation.

The development of sustainable, integrated **biorefineries** that produce both energy and bio-based products is a proven pathway to enhance the efficiency and profitability of bio-based systems. These facilities enable the optimisation of biomass use, creating value across multiple markets and reducing fossil fuel dependence.

EERA Bioenergy underlines that **bioenergy** is already a mature, scalable, and innovation-driven pillar of the circular bioeconomy.

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2. Technological Readiness and Deployment Pathways

The bioenergy sector encompasses a broad portfolio of technologies, many of which are commercially available or nearing market readiness:

- **Biogas and biomethane**: flexible and storable energy vectors with strong potential for grid injection, off-grid rural supply, and sector coupling.
- **Advanced biofuels** (including SAF and marine biofuels): essential for the decarbonisation of aviation, shipping, and heavy transport.
- **Thermochemical and biochemical conversion technologies**: enabling high-efficiency production of renewable heat and power from lignocellulosic and residual biomass.
- **Hybrid biorefineries**: integrating energy and materials outputs from sustainable feedstocks.

These technologies support regional development, circular resource use, and the emergence of clean industrial clusters.

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3. Environmental, Economic and Social Impacts

Bioenergy systems deliver substantial co-benefits:

- **Climate and environmental**: net and negative GHG emissions reduction, nutrient cycling, and avoided methane emissions from unmanaged biomass.
- **Economic**: industrial investment, scale-up of domestic value chains, and reduced fossil energy imports.
- **Social and territorial**: job creation in rural and peri-urban areas, technological leadership, and supply security.

These impacts align with EU strategies, including the Green Deal, REPowerEU, the Climate Law, and the Fit for 55 package.

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4. R&I Needs and Policy Recommendations

EERA Bioenergy calls for an ambitious and coherent research and innovation agenda to consolidate Europe's leadership in bioenergy:

- **Scale-up funding** for pilot and demo plants, including first-of-a-kind facilities, under the upcoming Framework Programme and national programs.
- **Support for integrated biorefineries** that combine bioenergy and bio-based outputs and promote optimise biomass use.
- **Establishment of regional hubs** to coordinate bioenergy research, innovation and deployment across Member States. And promote inter-member State collaboration through the hubs.

Furthermore, the future Bioeconomy Strategy should acknowledge the role of bioenergy not only as a transition fuel but as a long-term enabler of climate neutrality and circularity.

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5. Role of Biocircularity (Complementary)

We acknowledge that the broader concept of **biocircularity** —understood as the renewable dimension of the circular economy applied to biomass— offers a useful framing for promoting optimised use, integrated value chains and rural economic development. Bioenergy, particularly when embedded in biorefineries, contributes directly to this vision and should be seen as a vector of circular bio-based innovation.

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6. Conclusion

Bioenergy is a mature, scalable and multifunctional pillar of the European bioeconomy. It delivers direct contributions to EU strategic goals in energy, climate, agriculture, rural development and industrial competitiveness. EERA Bioenergy reiterates its commitment to supporting a robust, science-based and innovation-oriented implementation of the EU Bioeconomy Strategy.

We stand ready to provide our expertise to ensure that bioenergy is positioned as a driver of a just, circular and climate-neutral European future.