Declaration of the European Circular Composites Alliance

23rd May 2025

Mission: Advance the circular economy for composite materials, bringing together all stakeholders to drive collective action and speak with one voice.

Fibre reinforced polymer composites are durable, engineered materials offering a long service life, high strength and stiffness, excellent chemical and temperature resistance, as well as freedom of design. They are crucial for applications providing critical services to society and are key enablers of the EU Clean Industrial Deal objectives. They are used, for instance, in the renewable energy sector, and automotive, aerospace, industry and defence applications.

The European Circular Composites Alliance (ECCA) will work to promote a more circular use of composite products through the circularity strategies of reuse, repair, remanufacture, repurpose and recycle.[1]

This dynamic is already underway in Europe with several virtuous examples (see Annex) but it is clear that a collective effort is needed to get the circularity of composites off the ground and consolidated to the benefit of the entire industry.

1. Core Objectives and Principles

The ECCA is a collaboration of private and public stakeholders across the composites value chain in Europe, acting voluntarily to demonstrate that composites are valuable resources for the circular economy.

The alliance aims to reduce waste, increase the collection of composites waste for recycling, and contribute to environmental protection, pollution reduction, and reduced raw material extraction, fully supporting the European Green Deal's target of net-zero greenhouse gas emissions by 2050.

The ECCA intends to work across the entire recycling value chain, ensuring product functionalities, consumer protection, safety, and industrial hygiene are all maintained. A key objective is to realize the full potential of recycled composites, supporting the sustainable growth of Europe's industries, and promoting policies facilitating the free movement of waste for recycling and the adoption of products made from recycled materials.

Signatories commit to working within their competencies and respecting all applicable laws, including competition rules. The ECCA will adopt a competition compliance program.

2. Deliverables

Design for Circularity and Recycling: Develop, update, or revise design for circularity guidelines for all composite products, considering their full life cycle. For composite products for which lifetime extension strategies (repair, reuse, repurpose …) are no longer possible, develop design for recycling guidelines to improve recyclability, while meeting end-user needs.

Collection and Sorting: Target improved composites waste collection and zero landfilling of composites waste. A state-of-play report on collected and sorted waste will be delivered to identify untapped potential and map necessary investments in collection and sorting facilities to

[1] EuCIA publication: Composites-are-circular-materials

reach zero landfilling, calling for public authority contribution.[2] Standardized methods to assess both the environmental impact (LCA) and the quality of sorted composite waste will be developed.

Recycled Content: Increase the uptake of recycled composites in new finished products, while ensuring quality and safety. The ECCA will work to create effective conditions for increased uptake, and identify and report on legal, economic and technical barriers, as well as potential solutions. The ECCA will call for voluntary pledges from end-use sectors to use more recycled composites. It will support the development of European standards and guidelines covering the efficiency and sustainability of composites recycling processes and the properties of recycled composites. The ECCA will also communicate and promote the positive value of recycled composites.

Recycling Status, R&D and Investment Needs: Deliver an overview of the status of recycled composites production in Europe to identify untapped potential and guide investment planning. This includes mapping recycling infrastructure needs by Member State, defining R&D priorities to overcome technological barriers, and establishing a circular composites research agenda. The ECCA will outline required investments, addressing economic, regulatory, and technological challenges, and call for active support from both the value chain and public authorities.

Monitoring: Set up a harmonized voluntary system for the EU value chain to monitor volumes of recycled composites used in European products. This system will be transparent, trusted, and ensure traceability of data from collected and sorted waste, and recyclers' inputs and outputs. The system and data will be independently audited, and all stakeholders and public authorities are called upon to support it.

3. Structure and Governance of the Alliance

Given the diversity of different markets, applications, and end-of-life scenarios for composites, the supply chain for the recovery and reuse of materials can be thought of, as a first approximation, to be market-specific, eventually comprising some cross-sector topics.

To address this, a bottom-up approach will be adopted in which the alliance members will organize themselves in dedicated Working Groups (WGs) for different applications. Each WG will deliver on the areas previously listed, such as collection and sorting, design for circularity, recycling, investment, R&D, etc. and will be organized independently through the election of a Chair, Vice-Chair, and Coordinators responsible for each area.

In signing the declaration, you commit to allocating adequate human resources to participate in the working groups.

All alliance members will meet twice a year in a General Assembly, which will also elect a President and a Steering Committee. The Steering Committee will coordinate cross-cutting activities, monitor the progress of Working Groups, receive feedback on overall objectives, and conduct conciliation of any possible conflicts. It will also produce an Annual Report for approval by the General Assembly. The General Assembly will set and, if necessary, revise priorities for deliverables and milestones.

The management costs of the alliance will be covered by sponsors; no membership fee is required to become a member.

[2] EuCIA position paper: Enabling-circular-composites-starts-with-waste-codes

4. Code of Ethics and Conduct

All individuals engaged in activities within the alliance should be guided by the principles of fairness, integrity and impartiality and make use of transparent and consensus-based processes and comply with European competition laws. Non-negotiable minimum standards of behavior include compliance with legal obligations, democracy, impartiality, coherence, voluntariness, traceability, unity and social responsibility.

All signatories agree to perform and act in good faith, consistent with the purpose, policies and principles of the alliance. They will act with honesty, integrity, respect, openness and transparency in all their dealings. They will respect others and the diversity of professional opinions – scientific, technical or otherwise.

Any real, potential or perceived conflict of interest should be communicated in a fair, transparent and timely manner to interested parties, so it can be addressed through the appropriate mechanisms. Disputes will be identified and escalated in a timely manner, according to agreed processes and resolution mechanisms, and the outcomes of such processes will be respected and upheld.

5. Summary

5.1 Objectives

- Promote public awareness of the benefits and value of recycled composites.
- Mobilize public and private investment into recycling and R&D infrastructure.
    - overview of the status of recycled composites production in Europe to identify untapped potential
    - map investments and funding needed by Member States
- Develop standardized methods for assessing both the environmental impact (LCA) and the quality of sorted composites waste.
- Develop and maintain design for circularity and design for recycling guidelines.
- Create a harmonized EU monitoring system for traceability of recycled composites.
- Foster voluntary pledges from industry to use recycled composites.
- Establish dedicated Working Groups and a Steering Committee to coordinate actions and governance.

5.2 Deliverables

- Increase circularity of composites to realize the full potential of recycled composites.
    - Enhance the uptake of recycled composites in new products, ensuring their safety and quality.
    - Increase collection, sorting, and recycling rates across all EU Member States.
    - Optimise the role of waste codes and movement of waste to enable the best circular solutions to develop and mature.
    - Target improved composites waste collection and zero landfilling of composites waste.
- Identify and resolve legal, economic, and technical barriers to composites recycling.
- Promote environmental protection through reduced raw material extraction and pollution.
- Publish an Annual Report monitoring progress and outcomes from Working Groups.

6. How to become a member

Organisations can join the alliance by completing the form available at www.eucia.eu/ecca

ANNEX: Circularity in Action

Numerous R&I projects and industry initiatives across Europe are already advancing the circularity of composites. This list is by no means exhaustive but is intended to offer examples of some ongoing approaches and activities. The ECCA will develop a comprehensive list of circularity initiatives, projects, and resources.

Industry initiatives

KiMuRa project, Finland: Launched in 2020, KiMuRa recycles composites waste by shredding it and co-processing it in cement kilns. This process turns waste into cement raw material and recovers energy from resins, reducing landfill and fossil fuel consumption.
More: plastics.fi/en/activities/composites-recycling-route-kimura/

Life cycle assessment (LCA): A study by EuCIA and SGS INTRON concludes that co-processing end-of-life composite waste in cement kilns can reduce CO_2 emissions by up to 1 ton per ton of waste compared to incineration. The study advocates for EU recognition of cement co-processing as a recycling method to support circular economy goals.
More: eucia.eu/wp-content/uploads/2024/10/LCA-of-Composite-Waste-through-Cement-Co-Processing.pdf

Circular boating initiative, France: Industry leaders have joined forces to revolutionize boat manufacturing with a circular economy model, so that boats can now be built using recycled materials. This pioneering collaboration to achieve circularity in boat production offers a model for composites sustainability.
More: www.arkema.com/global/en/media/newslist/news/global/innovation/2025/20250305-nautical-construction-partnership/

European funded projects

REFRESH: REFRESH aims to develop and demonstrate a novel circular, smart system enabling improved recycling of glass fibre reinforced composites derived from wind turbine dismantling or reblading. More: https://refresh-project.eu/

MC4: The MC4 project aims to develop economically and technically feasible technologies for recycling fibre reinforced composite parts with the objective of making European carbon and glass fibre value chains more circular and competitive. More: https://www.mc4-project.eu/

SMART CIRCUIT: This project aims to accelerate the adoption of digital and technological solutions in the circular economy, focusing on capacity building, enhancing regional cooperation, and promoting circular strategies across key value chains. More: www.interreg-central.eu/projects/smart-circuit/

Resources

JEC Composites Sustainability Report: This annual publication, produced by JEC Group in partnership with EuCIA, highlights innovation in sustainability and circularity of composites.
More: Special Issues - JEC Composites Magazine