ECP4 Contribution to the consultation on the

Call for Evidence on the Advanced Materials Act

About ECP4

ECP4, the European Composites, Plastics and Polymer Processing Platform, is the European industry-driven platform dedicated to innovation in plastics, composites, and polymer processing technologies. Bringing together key stakeholders from industry, research, and academia, ECP4 works to strengthen collaboration across the value chain and to promote research and innovation that supports sustainable, competitive, and advanced polymer-based materials and processes.

Plastics as Strategic Advanced Materials: A pillar of the European economy and innovation landscape

ECP4 welcomes the European Commission's initiative to develop an Advanced Materials Act, which represents an important opportunity to modernise the EU's innovation framework and address critical value chain gaps. In this context, we underline the importance of recognising plastics as strategic, high-performance advanced materials that deserve dedicated support throughout the R&I, manufacturing, and deployment lifecycle.

The plastics sector is deeply integrated into Europe's industrial backbone. The plastics industry in the EU27 supports over 1.5 million jobs across 52,000 companies, primarily SMEs, and generates a turnover of €338 billion[1]. It contributes significantly to Europe's global trade surplus and plays a central role in industrial ecosystems such as automotive, electronics, building and construction, packaging, energy, healthcare, and increasingly in defence and aerospace.

[1] Plastics Europe – Plastics the Facts

Traditionally produced within the EU, some polymers (e.g. PVC) that are essential for our economic prosperity, are now imported[2] from other parts of the world (especially Asia). A significant part of EU plastics converters are already facing shortages issue with some polymers. Lack of correction would lead to an increased dependency of China, US for specific polymers production

These materials are not merely enablers of downstream manufacturing, but they are themselves high-value advanced materials with properties such as durability, chemical resistance, and lightweighting, which are essential to next-generation applications. This includes renewable energy, electric vehicles, medical technologies, and protective systems. Crucially, many of these applications have dual-use potential, serving both civil and defence purposes: high-performance polymer components, used in communication systems and aerospace structures, represent strategic capabilities that Europe cannot afford to weaken through policy gaps or underinvestment.

To fully harness the benefits of these materials and secure Europe's industrial resilience, targeted and sustained investment in R&I is indispensable.

The Call for Evidence notes that "*The demand for advanced materials is expected to increase significantly in the coming years, opening up innovation markets and investment opportunities in the EU*." This opportunity should translate into demand that is met by EU-based value chains, rather than shifting dependence to third countries, so that Europe retains strategic autonomy and safeguards industrial competitiveness. Achieving this requires a clear focus on scaling up EU capacity, including manufacturing, processing, and end-of-life solutions, supported by targeted investment and enabling conditions that make it commercially viable to innovate and produce advanced materials in Europe.

The urgent need to boost R&I investment in plastics and composites

The Advanced Materials Act must prioritise the strengthening of Europe's innovation capacity in plastics. These materials are undergoing a profound transformation, driven by the need for sustainability, circularity, and performance. The Political Guidelines 2024 – 2029 of President Ursula von der Leyen underline that a pivotal role in the Commission's plan will be given to increasing the EU "*research spending to focus more on strategic*

[2] According to plasticsEurope, the dynamic of plastics production in EU is on a negative trend. "Europe's decline contrasts starkly with the industrial boom taking place in other regions. Global plastics production increased 4.1% last year and by 16.3% since 2018."

priorities, on groundbreaking fundamental research and disruptive innovation, and on scientific excellence." Achieving these objectives depends on accelerating the pace and scope of research and innovation, particularly in the following areas:

- Eco-design and recyclability of complex polymeric products
- Advanced recycling technologies
- Safe-by-design formulations, including the removal or substitution of legacy substances of concern
- High-performance bio-based polymers and low-carbon production processes
- Digital tools for traceability, mass balance verification, and product passport integration

Despite their strategic role, current R&I investments in advanced plastics remain fragmented and underfunded. There is an urgent need for dedicated funding streams within Horizon Europe, the European Competitiveness Fund, and future Framework Programmes that specifically address plastics and polymer-based materials.

We support the Commission's goal to accelerate its plan to "*reduce the time-to-market of advanced materials"*. For plastics, this requires support for pilot-scale testing, access to technology infrastructures, and collaborative cross-border R&I projects that link material developers, recyclers, converters, and end users.

A recycling industry under threat: Level the playing field through enforcement

While EU regulations are increasingly focused on recycled content, design-for-recycling, and reduced environmental impact, the European recycling industry is facing a crisis.

At the heart of this crisis is a flood of low-cost imports of recyclates and articles, often accompanied by unverifiable or misleading claims regarding origin, compliance, or chemical composition. This undermines the credibility of recycling efforts and discourages domestic investment in clean, compliant recycling systems. There will be no strong circular advanced materials production in Europe without a level playing field with imported materials.

To protect the integrity of EU recycling markets and the competitiveness of responsible operators, consequently rebuilding confidence in the industry and investments, ECP4 strongly supports the swift adoption of the following measures:

- CN codes for recycled polymers, starting with PET and followed by the rest of the polymers, as well as their converted and semi-finished forms

- A digital traceability platform, linking Digital Product Passports (DPPs) to customs declarations and enabling market surveillance authorities to assess compliance in real time
- Mandatory REACH[3]-compliant declarations for all imported plastics and recycled content claims, including information on Substance of Very High Concern (SVHC), restricted substances, and compliance with Regulation 2022/1616[4]
- Customs-level oversight, including the development of test methods to detect persistent organic pollutants (POPs), legacy additives, and non-conformities

Europe cannot achieve circularity or sustainability if its own recyclers are systematically undercut by products that do not meet equivalent standards. Strong and harmonised enforcement is both a regulatory necessity and a prerequisite for innovation to thrive.

Eco-Design as a recognised practice

We welcome the emphasis placed on circularity and eco-design in the *Call for Evidence*, particularly the ambition to increase the reuse, remanufacturing, and recycling of advanced materials. For plastics, design-for-recycling must become a verifiable standard.

This will only be successful if backed by:

- Harmonised CEN standards for plastics design, aligned with the Packaging and Packaging Waste Regulation[5], the Single Use Plastics Directive[6], and the Construction Products Regulation[7]
- Certification schemes for design-for-recycling, managed by independent and accredited third parties, to avoid fragmentation and greenwashing
- Support for testing infrastructures and labs capable of validating recyclability, disassembly potential, and substance compatibility
- Funding tools to help companies, especially SMEs, transition to compliant designs and obtain necessary certification

[3] Regulation (EC) No 1907/2006 Of The European Parliament And Of The Council Of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
[4] Commission Regulation (EU) 2022/1616 of 15 September 2022 on recycled plastic materials and articles intended to come into contact with foods, and repealing Regulation (EC) No 282/2008
[5] Regulation (EU) 2025/40 on Packaging and Packaging Waste
[6] Directive (EU) 2019/904 of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment
[7] Regulation (EU) 2024/3110 of the European Parliament and of the Council laying down harmonised rules for the marketing of construction products

Eco-design will not be realised through regulatory pressure alone. It requires practical implementation tools and investment in R&I to generate recyclable, modular, and durable polymer products adapted to real-world market conditions.

Strategic autonomy and economic security depend on materials innovation

The *Call for Evidence* rightly places advanced materials at the heart of the EU's efforts to strengthen strategic autonomy, economic security, and industrial competitiveness. For this ambition to succeed, the strategic role of plastics and composites must be fully reflected in the final Act.

Whether in the form of lightweight composites used in wind turbine blades, carbon-fibre elements in electric vehicles, or barrier materials in medical applications, plastics already enable the green and digital transition. Therefore, their inclusion among Europe's advanced materials that benefit from dedicated funds is of utmost importance.

The Advanced Materials Act should therefore:

- Support the integration of plastics into strategic value chains, including energy, mobility, health, and defence
- Promote cross-sector collaboration between material scientists, recyclers, digital developers, and end users
- Build a coherent and horizontally applied framework, not limited to metals or critical raw materials alone

How excessive regulation risks holding back advanced plastics research: Need for legislative simplification

According to the Call for Evidence, one of the main factors hindering the EU's innovation and competitiveness is the lengthy approval process and regulatory burden, administrative requirements, as well as complex and unharmonised implementation across the Member States.

In 2025, the Commission presented ten omnibus proposals that reduce recurrent administrative costs by EUR 11.9 billion across several sectors, including environmental legislation (Omnibus VIII) and chemicals (Omnibus VI). In this framework, and with the

Competitiveness Compass[8] as its defining strategy, the Commission announced its objective to urgently boost innovation, foster decarbonisation and competitiveness, reduce dependencies, and strengthen strategic autonomy, specifically calling for unprecedented efforts to simplify Union laws.

In the current legislative setting, broad legislative initiatives such as the REACH regulation or the Packaging and Packaging Waste Regulation often impose restrictions based on hazard classifications without fully accounting for risk-based approaches or the innovation potential of new materials. In some cases, these frameworks create significant uncertainty around the legal status and future marketability of novel polymers, even before they leave the lab.

Furthermore, one-size-fits-all policies risk lumping advanced plastics together with conventional materials, ignoring important distinctions in design, end-of-life performance, and environmental impact. Without regulatory flexibility and incentives for innovation, the EU risks slowing progress on the materials science breakthroughs that could support its transition to a low-carbon, resource-efficient economy.

To strike the right balance, the EU must ensure its regulatory frameworks are science-based, proportionate, and designed to encourage, rather than penalise, sustainable innovation. Supporting early-stage research, piloting new materials under controlled conditions, and recognising the diversity and potential of advanced plastics will be essential for Europe to maintain its leadership in sustainable manufacturing.

Foster a strong and sovereign EU technological AI ecosystem for research on advanced materials

Artificial intelligence has the potential to transform Europe's capabilities in advanced materials discovery — particularly in polymers and plastics — by discovering novel and high performances novel materials, dramatically accelerating design cycles, reducing reliance on costly trial-and-error laboratory work, and enabling data-driven breakthroughs aligned with sustainability goals. Deploying AI across European research infrastructures and industry will help identify low-carbon, recyclable, and high-performance materials faster, strengthening strategic autonomy in key value chains such as packaging, mobility, electronics, and healthcare. To fully capture this opportunity, European policy should prioritize open data ecosystems, interoperable modelling platforms, investment in skills, and responsible governance frameworks that encourage innovation while ensuring safety, transparency, and alignment with the circular economy and climate targets.

[8] COM(2025) 30 final of 29 January 2025, A Competitiveness Compass for the EU.

Conclusion

ECP4 urges the European Commission to ensure that the Advanced Materials Act delivers on its promise of strengthening EU leadership in innovation, resilience, and sustainability. This will not be achieved without targeted investment in the plastics and composites sector, which is at the very core of innovation, circularity, and strategic autonomy.

ECP4 is ready to support the Commission in shaping a framework that truly enables the transition to safe, sustainable, and high-performance materials, and we underline that this must include plastics not as an afterthought, but as a central pillar of Europe's advanced materials ecosystem.

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