A NEW EUROPEAN INDUSTRIAL POLICY FOR THE CIRCULAR ECONOMY

Executive Summary



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INTRODUCTION

This document summarises the results of the Study "*A New European Industrial Policy for the Circular Economy*", carried out by TEHA Group in collaboration with CONAI, developed with the aim of formulating a **new operating model for the secondary raw material market in the EU**, in light of the changed context and supporting competitiveness, strategic security and value creation through circularity.

The study stems from an observation that runs through the entire European debate on industrial competitiveness. In just over a decade, the Union has built **the most ambitious regulatory framework on recycling in the world: over thirty-five** legally binding targets[1], distributed over all the main waste streams. However, this legislation has not been translated into reality: the **rate of circular use of materials** has increased from 11.1% in 2014 to 12.2% in 2024[2] , bridging less than a tenth of the gap to the EU's 24% target for 2030[3].

It is from this gap between regulatory ambition and industrial reality that the Study starts, questioning how the European ambition in terms of sustainability can be combined and rooted with respect to the production and industrial reality of the secondary raw material supply chains, with particular attention to strategic **manufacturing supply chains**[4].

This is also a precondition for the value that the recycling system already generates at an economic and social level in the EU to be preserved and increased. The study therefore calls for recycling to be looked at not only as an environmental dossier, but also as a **structural component of European industrial policy**, its **competitiveness** and its **strategic autonomy**.

To answer this question, the study combines three levels of analysis. A first quantitative level, which applies for the first time on a European scale a proprietary input-output model to measure the economic, employment and social value generated by the recycling industry.

A second comparative level, which analyzes the extended producer responsibility systems in the twenty-seven Member States, case studies from other countries and sectors, and analytical models relating to the demand-supply system of the secondary raw material in the EU and trade flows, to identify the conditions for a truly effective governance.

A third level of direct listening to the supply chain, through a programme of interviews with companies, recycling operators, financial institutions and European institutional observatories. The full description of the methodology and detailed results is available in the full Strategic Report.

SCOPE OF THE STUDY

The study focuses on the recycling sector, analysing **seven supply chains of materials** identified as **strategic for European manufacturing**: steel, aluminium, paper, plastic, glass, wood and compostable bioplastics. Most of the European regulatory objectives on recycling and the most significant share of the industrial value generated by the system converge on these supply chains.

From this work emerges a new model of operation of the European market for secondary raw materials and, starting from it, three policy priorities with the related operational actions. The following 10 Key Messages summarize the entire path.

[1]European Commission, European Union Action Plan for the Circular Economy, 2 December 2015.
[2]European Environment Agency (EEA), European Environment 2025, Thematic Briefing 4.3 "Waste Recycling", 29/09/2025.
[3]Eurostat, Circular material use rate, latest available data referring to 2024.
[4]For the purposes of this study, strategic manufacturing supply chains are defined as the steel, aluminium, paper, plastic, glass, wood and compostable bioplastics supply chains. The latter, however, are not included in the analytical processing due to the limited availability of harmonised data at EU level.

1 A WINDOW OF OPPORTUNITY FOR CIRCULARITY IN THE EUROPEAN UNION

The next twenty-four months will represent a real momentum for the definition of the future regulatory framework on sustainability and circularity in the EU. Four legislative acts negotiated in parallel offer the opportunity to review the existing framework, in the sense of greater competitiveness and enhancement of the European recycling supply chain.

The European Union is now facing a crucial regulatory momentum. After more than a decade of progressive construction of the EU framework for sustainability and the circular economy – which has led the EU to develop one of the most advanced regulatory systems in the world, with 35 binding targets – **the next twenty-four months will be decisive in defining the rules of the market in the years to come**.

In fact, the ***"One Europe, One Market"*** roadmap concentrates four complementary initiatives with important implications for the secondary raw materials supply chain in the same time frame: the *Circular Economy Act*, aimed at encouraging the **creation of a European market for secondary raw materials**; the *European Product Act*, which will act on eco-design and recycled content; the *Critical Raw Materials Centre*, intended to strengthen market intelligence, demand aggregation and strategic procurement management; and the *Public Procurement Act*, which can use **public demand as a lever** to support the use of recycled materials[5].

The challenge is therefore not to further increase environmental ambition, but to **use this regulatory window to transform circularity into a structural component of European industrial policy, its competitiveness and its strategic autonomy**. The simultaneity of the initiatives is a unique opportunity to overcome the fragmentation between 27 national systems and build a true European Single Market for secondary raw materials, supporting industrial supply chains and proposing a regulatory framework rooted in the European industrial reality.

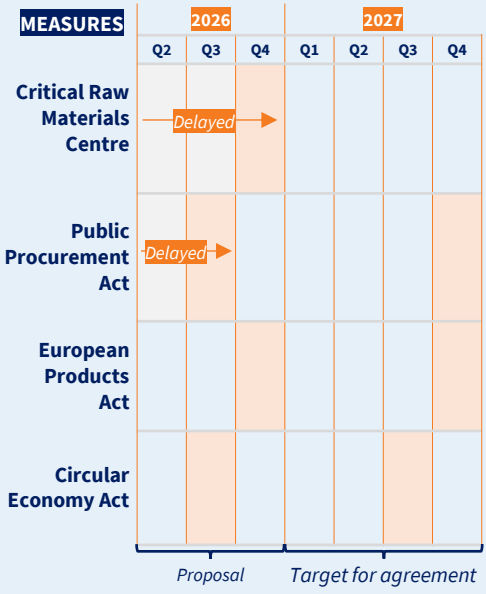


Figure 1. Expected timeline for the adoption of the main European measures on the circular economy, 2026–2027. *Source: TEHA Group elaboration on European Commission and European Parliament data, 2026.*

[5] Council of the European Union, "One Europe, One Market" roadmap, 23 April 2026.

2 THE CHALLENGES FOR RECYCLING AND SECONDARY RAW MATERIALS SUPPLY CHAIN

The European supply chain of Secondary Raw Materials - although with precise specificities that characterize the different materials and the different Member States - is currently going through a phase of great complexity, characterized by a lack of full consistency between supply and demand, volatile dynamics associated with economic pressures and competition from imports from third countries.

Supply and demand for secondary raw materials still remain misaligned for different materials and the use of secondary raw materials is not sufficient to fully support the production capacity of recycled materials in Member States. In 2024, out of about 7.7 billion tons of materials processed by the European economy, only 1.04 billion – about 14% – came from recycling and backfilling[6]. In the same year, the **circular material use rate** stood at 12.2%, **compared to an EU target of 24% by 2030**. This would require almost doubling in just six years, indicating a disconnect between objectives and European industrial reality.

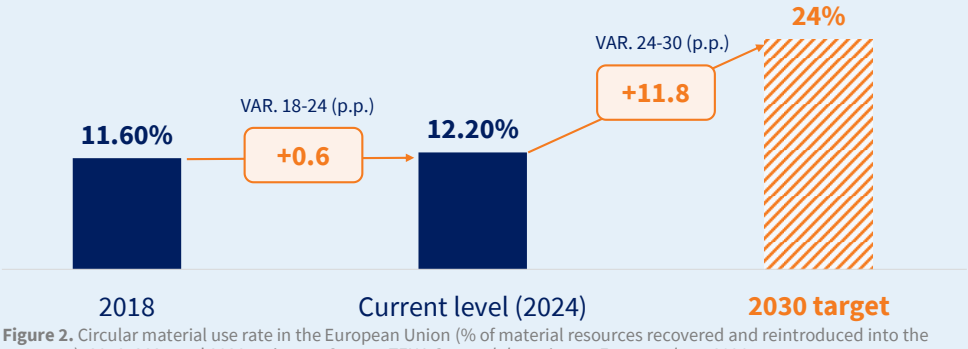


Figure 2. Circular material use rate in the European Union (% of material resources recovered and reintroduced into the economy), 2018, 2024 and 2030 estimate. *Source: TEHA Group elaboration on Eurostat data, 2026.*

Price dynamics also weigh on the industrial sector and on the consistency between supply and demand for European secondary raw materials. In the case of plastics, for example, the value of the secondary raw material fell from €472 per tonne in 2022 to €321 in 2024, a reduction of 32%, while the recycling rate remained substantially stable at around 40%[7]. Added to this are higher European costs for energy, labour and compliance, competition from virgin materials and recycled materials imported from third countries at lower costs that are not always verified by equivalent standards, as well as persistent regulatory and market fragmentation.

The effects on industrial capacity are already visible. In 2024, **Europe's installed capacity for plastic recycling was 13.5 million tonnes**, but almost 1 million tonnes of capacity was lost in the previous three years. Data for 2025 also indicate a **50% increase in plant closures**, despite the introduction of minimum recycled content obligations for some applications (e.g. PET bottles). This reveals a growing contradiction between increasingly ambitious European targets and a production base under increasing pressure.

[6] TEHA Group based on Eurostat data, Raw Material Consumption / Material Flow Accounts dataset, 2026.
[7] TEHA Group based on Eurostat, Comtrade and S&P Global data, 2026.

3 AN INDUSTRIAL HERITAGE TO BE PROTECTED

The stakes are high: preserving the recycling chain in the EU represents a real choice of industrial policy and strategic security for manufacturing. It generates 555 billion euros in annual economic impact (direct, indirect and induced), 222 billion in added value and over three million jobs in local economies.

Preserving the European recycling chain means **protecting an already existing industrial, employment and strategic heritage**, which has also developed as a result of the EU's environmental priorities. To quantify its value, the Study applied for the first time at EU level the TEHA's proprietary impact measurement methodology **to the recycling chain**[8], including the collection, treatment, recovery and transformation of waste into new raw material.

The results return an **industrial dimension of absolute importance**. Starting from 218 billion euros of direct turnover, the sector activates an additional 225 billion along the supply chain and 112 billion through induced effects, reaching a **total economic impact** of **555 billion euros per year**. In terms of wealth produced, the total added value (direct, indirect and induced) reaches 222 billion euros, equal to about **1.2% of the Union's GDP**, while the jobs sustained exceed 3 million, considering direct, indirect and induced employment.

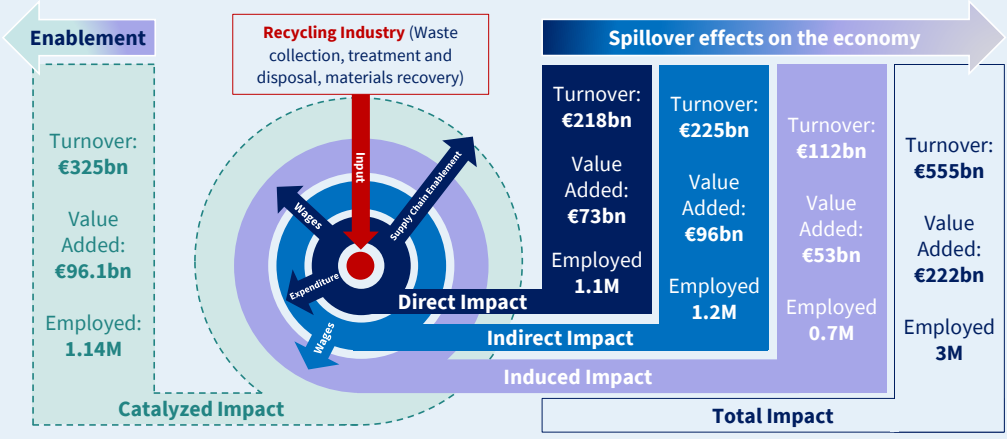


Figure 3. Economic value of the EU's recycling industry in the seven strategic supply chains (€ billion), 2024. *Source: TEHA Group proprietary model based on Eurostat, JRC data and FIGARO input-output tables, 2026.*

[8] TEHA Group proprietary model based on Eurostat Structural Business Statistics, FIGARO input-output tables and Joint Research Centre data, 2026.

The multipliers – **2.54 on turnover**, **3.04 on added value** and **2.66 on employment** – confirm how deeply integrated recycling is into the European production fabric and capable of generating value far beyond the industry itself. The supply chain therefore emerges not as a simple environmental service, but as a **true European industrial infrastructure, with widespread effects on growth, employment and economic resilience**.

In addition to this, there is the impact enabled through the supply of secondary raw materials from the so-called strategic manufacturing supply chains. The model quantifies the downstream industrial activity made possible by the use of recovered materials, relating the availability of secondary raw materials, recycled input rates and the activity of user industries.

In the main industrial supply chains analyzed, **this enabling function supports** approximately **325 billion euros** in **turnover**, **96.1 billion euros** in **added value** and **1.14 million jobs**. Recycling thus emerges as a real link in the European industrial supply chain, capable of reducing dependence on virgin and imported raw materials and, at the same time, strengthening the resilience and strategic autonomy of the Union.

4 A SYSTEM THAT GENERATES NET BENEFITS

The recycling system in the EU generates benefits for society and citizens that outweigh the costs it needs: every euro invested in collection, sorting and recycling produces 1.66[9] euros of economic, environmental and social benefits.

If we consider the net benefits deriving from recycling, the **overall balance for the European society is positive**. To measure this, the Study has developed a cost-benefit analysis[9] that considers the recycling system in a broader perspective than just operating costs, including both the resources necessary for collection, selection, transport and recycling, and the system costs and externalities related to compliance, the treatment of residual flows and transport. These components are contrasted with the **economic, industrial and environmental benefits generated by the supply chain**: the value of the secondary raw materials recovered, the economic effects induced along the production system, the disposal costs avoided, the reduction of CO_2 emissions and the benefits associated with energy recovery.

The results show that the **system is able to return to society a value significantly higher than the resources necessary for its operation**.

In the European Union in 2025, against approximately 18.8 billion euros of annual costs for the packaging collection, selection and recycling system, the total benefits reach 31.2 billion euros, resulting in a **net positive balance of about 12.4 billion euros**.

[9] TEHA Group based on Eurostat, ISPRA, OECD, JASPERS-EIB/JRC and International Union of Railways (UIC) data, 2026.

In other words, **for every euro invested** in the European recycling system, **1.66 euros of benefits for society** are generated[10]. This evidence further reinforces the need to read recycling not only as a tool to achieve the Union's environmental objectives, but as an infrastructure capable of producing widespread and monetizable economic and social value, without considering the importance of ensuring stable and lasting intra-EU supply chains.

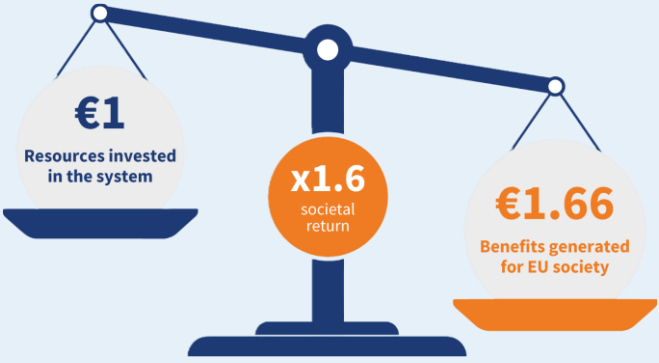


Figure 4. Costs and benefits of the EU-27 packaging collection, sorting and recycling system for the European Society (Euro), 2025. *Source: TEHA Group elaboration on proprietary model, 2026.*

5 A NEW OPERATING MODEL FOR THE EUROPEAN SRM MARKET

To preserve and enhance this value in light of the important changes taking place, the study identified a series of strategies and actions for an effective new model of functioning of the European secondary raw materials market, built on five functional blocks and a set of cross-cutting enablers.

In the light of the evidence that emerged, the study proposes a **new operating model for the European secondary raw materials market**, built on the basis of a central question: *what market, regulatory, industrial and financial levers are needed to strengthen the European secondary raw materials ecosystem and make it truly competitive, also in light of the changed reference context*?

The model therefore does not intervene on a single element of the supply chain, but addresses in an integrated way the conditions necessary to make the market work on a European scale with the aim of contributing to the regulatory momentum and the EU decision-making process.

The architecture is divided into five vertical blocks. The **first**, **Market Design-Pull & Supply**, aims to rebuild a stable balance between the production of secondary raw materials in the EU and industrial demand.

The **second**, **Governance and normative framework**, aims to make national rules and systems interoperable within the Single Market.

[10] The European cost-benefit model integrates different academic and institutional sources, recalibrated through a proprietary TEHA model. For 2025, it estimates approximately €18.8 billion of costs for the European system, as the sum of national systems, and €31.2 billion of benefits, with a benefit/cost ratio of approximately 1.66. For further details, please refer to the full Strategic Report.

The **third**, **Standards, Quality & Trust**, concerns the construction of common conditions of quality, traceability and reliability, which are essential for SRM to be recognized and exchanged as true industrial inputs.

The **fourth**, **Industrial Scale, Finance and Investments**, addresses the need to consolidate European production capacity and mobilise the capital needed for investment and growth.

The **fifth**, **Strategic Autonomy & Trade**, aims to preserve the strategic value of resources in Europe, reducing dependence on virgin raw materials and non-EU markets.

The starting point for the model framing

Which market, regulatory, industrial and financial levers are needed to strengthen the EU secondary raw materials ecosystem?

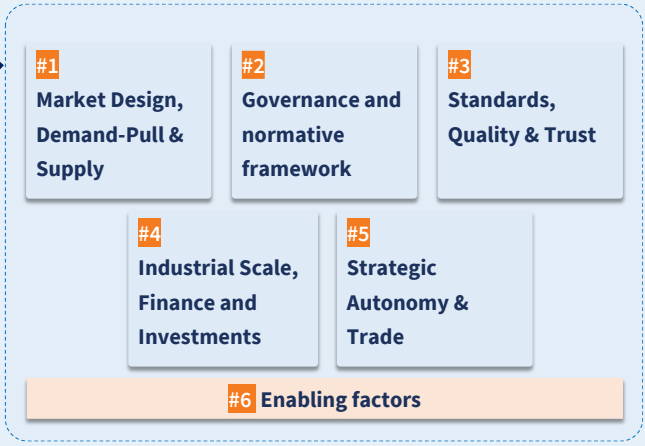


Figure 5. The five pillars needed to define a single European market for SRM. *Source: TEHA Group elaboration, 2026.*

6 THE CONDITIONS OUTSIDE THE SUPPLY CHAIN THAT ENABLE THE SYSTEM

Transversal to the model are the enabling factors that go beyond the specific sector of secondary raw materials and the regulatory framework on sustainability, but which condition its effectiveness: EU energy policies, training and skills creation, innovation and data and the social acceptability of green policies.

The first factor concerns **energy**, which is crucial for the competitiveness of activities such as recycling and recovery of materials, which are characterised by significant energy intensity. **75% of European companies identify the cost of energy as an obstacle to investment**: the availability of energy at competitive, stable and low-carbon prices is an essential condition for supporting production capacity and new investments.

A second area is **innovation and data**. More than **70% of European companies have already invested in digital transformation**[11] and, in recycling, digitisation, data interoperability and advanced sorting technologies that can improve traceability, process efficiency and verification of recycled content.

Equally relevant is the **availability of skills and a skilled workforce**: 79% of European companies cite the **shortage of skilled workers** as a barrier to investment[11]. Growing recycling capacity will therefore require specialised profiles and training and reskilling policies.

Finally, **social acceptance** remains central. Although 96% of Europeans consider **resource efficiency to be important**[11], consensus towards new green infrastructures and policies cannot be taken for granted. **Community involvement and clear communication of environmental**, employment and economic benefits are therefore essential to strengthen their acceptability.

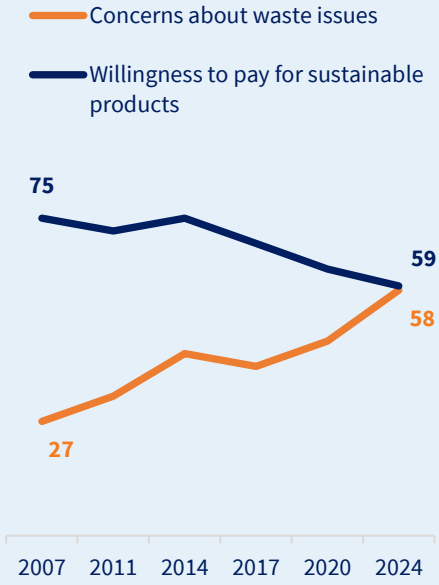


Figure 6. European citizens' perceptions and behaviours regarding the circular economy: waste concern and willingness to pay for sustainable products (% values), 2007-2024. *Source: TEHA Group elaboration on EEA data, 2026.*

7 THE FOUR BUILDING BLOCKS OF THE MODEL

The model is based on four characteristics designed to make it applicable to the twenty-seven national systems and consistent with European objectives: mutual recognition, industrial symbiosis, activation of investments and strategic security.

For each pillar, the Firm analysed the main areas for improvement of the current European structure, examined case studies from other countries and sectors and identified possible operating rules. **Four distinctive characteristics** emerge from this path, guiding the transition from a predominantly regulatory approach to a true industrial policy for secondary raw materials.

The first is **mutual recognition** as a founding principle. In a Europe characterised by different national systems and Extended Producer Responsibility (EPR)* models, reflecting the deep-rooted specificities of local contexts, the goal must not be a new centralised and forced harmonisation, but the aim must be the

[11]TEHA Group on Eurostat data, European Commission and sector surveys, 2026.
(*) National systems that organise and finance the collection and recycling of products and packaging on behalf of producers.

recognition and interoperability of systems that work, within common guidelines and a common framework, promoting the dissemination of best practices. The second is **industrial symbiosis**: recycling capacity must be reconnected to the demand of industrial supply chains, overcoming the **misalignment between the availability of secondary raw materials and the market's ability to absorb them through a clear**, shared and long-term industrial policy and mechanisms to reduce volatility, reasoning with multi-sectoral and non-closed logics on individual sectors (from the primary sector that can benefit from the result of organic recycling to the secondary sector that can absorb secondary raw materials generated by mechanical and chemical recycling).

The third feature is the **activation of investments**. Strengthening European production capacity requires bankable investments, supported by solid business cases, less exposure to price volatility, public-private cooperation and European risk-sharing and investment stimulus tools aimed at strengthening the circularity of the European economy. Of the approximately €120 billion invested each year in the EU circular economy, an unfunded **gap of €82 billion** is estimated [12].

The fourth is **strategic security**, which recognises **secondary raw materials** as a **component of European security of supply** and the role that EPR systems play and will increasingly play in securing intra-EU supply chains.

Strengthening recycling means reducing dependence on imported virgin materials, limiting exposure to geopolitical shocks and retaining materials, production capacity and industrial value in the Union. For this to happen effectively, **the specificities of each strategic supply chain must be recognised**.

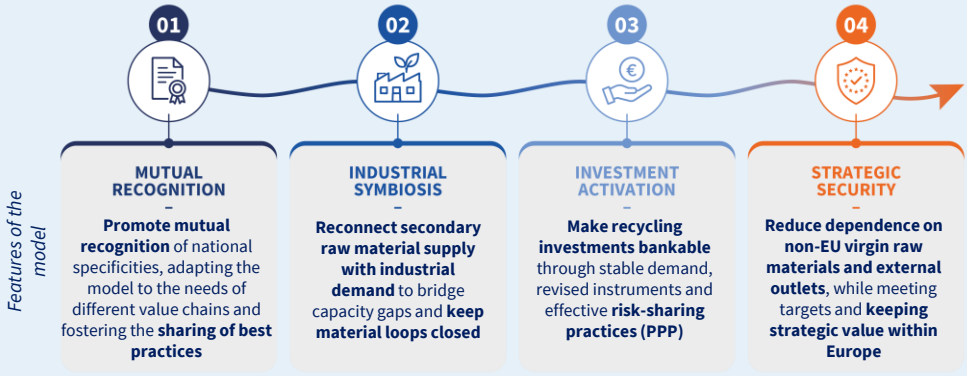


Figure 7. The characteristics of the new operating model of the secondary raw materials market in the European Union, developed by TEHA-CONAI. *Source: TEHA Group elaboration, 2026.*

[12] TEHA Group based on data from the European Investment Bank and the European Commission, 2026.

8 THE 3 INTERVENTION PRIORITIES AND THE RESEARCH POLICY PROPOSALS

1st priority

The governance of the supply chain and the construction of common rules for the European Single Market for secondary raw materials.

The fragmentation of governance is not a problem of implementation, but the consequence of **twenty-seven national systems built on different assumptions and contexts of supply chains**.

The criteria that establish when a recovered material ceases to be waste currently exist at European level only for scrap metal and glass, while the regulation on plastics is still under discussion. The practical consequence is that **the same material can be classified as a product in one Member State and as waste in another**, with an additional cost for the European plastics recycling sector alone estimated at around €120 million per year [13].

The comparative analysis[14] conducted on the twenty-seven Member States shows that **there is no governance model that is structurally better than the others**: Italy and Germany, two of the largest manufacturers in Europe with high demand for raw materials, both achieve high performance, recycled packaging per inhabitant[15], albeit through opposing EPR system architectures. It is this evidence that **orients the choice of policies towards mutual recognition and sharing of best practices**, rather than towards harmonization in forced architectures. The actions proposed by the study act on this basis: a **technical platform for comparison**, **participated by the EPR systems**, **under the European institutional secretariat**, the promotion of mutual recognition of **end-of-waste criteria** that define when a recovered material can be reintroduced on the market as a secondary raw material, the **extension of the digital traceability tools** already provided for by the European regulatory framework to secondary raw materials and the adoption of a **common data taxonomy**, to finally make performance between Member States comparable.

[13] TEHA Group based on Eurostat data, European Commission and sector surveys, 2026.
[14] TEHA Group elaboration on national agency data and EPR systems, 2026.
[15] TEHA Group based on Eurostat data and Regulation (EU) 2025/40, 2026.

2nd priority

Industrial symbiosis, i.e. the need to strengthen the integration between European collection and recycling capacity and stable, predictable industrial demand capable of absorbing secondary raw materials.

The European market for secondary raw materials is today **the only major raw materials market on the continent without an organized trading place** and a **shared price signal**. This absence weighs especially heavily on materials where industrial demand remains weak compared to available supply.

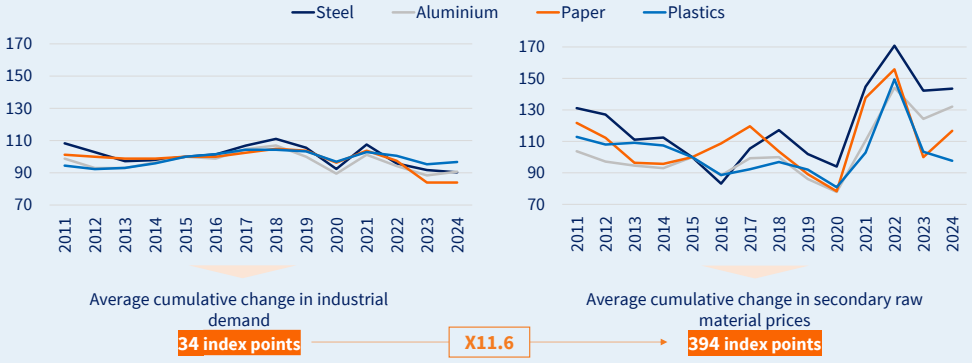


Figure 8. Industrial demand and secondary raw material prices in the European Union, proxy for material flow, indexed. 2011-2024. *Source: TEHA Group elaboration on Comext – EUROSTAT, Comtrade, OECD, Eurofer, European Aluminium Association data, 2026. Note: Both series are indexed to 2015 = 100, eliminating unit differences (€/tonne vs million tonnes) to allow a direct visual comparison. The "industrial demand" series measures the overall apparent consumption of the four materials (production plus net imports), including both virgin and recycled components; the "secondary-raw material prices" series, on the other hand, measures only the price of the secondary raw material. The comparison therefore shows that a relatively stable overall demand for the material coexists with an extremely volatile price of the recycled component alone: the latter is not explained by the former, but by factors specific to the secondary raw materials market.*

The evidence gathered by the study indicates that **public demand tools** work better when the recycled content requirements are binding and not simply rewarding: a scoring criterion tends to be compensated on the price by operators, without generating the stable demand necessary to justify new industrial investments. At the same time, experience from other European strategic sectors shows that **stimulating demand without ensuring effective controls and a level playing field at the border risks translating into an advantage for non-EU production**, rather than for the European supply chain.

The proposed actions therefore combine the construction of a single European marketplace for SRM, **the activation of a binding public demand**, the **strengthening of controls on the standards applied to imported materials** so that they are truly equivalent to made in EU, all within a European planning roadmap aimed at the bankability of investments.

3rd priority

Finance for the growth of the sector and in support of circularity.

TEHA Group's analysis shows that the constraint lies not in the availability of capital, which remains large in Europe, but in the **scarcity of projects capable of passing financing assessments**.

To respond to this constraint, the proposed actions extend tools that the Union has already experimented with in other policy sectors, such as the creation of a category dedicated to **recycling technologies** that benefit from them, on the model of the *Net-Zero Industry Act*[16], and the activation of price risk reduction mechanisms inspired by the Contracts for Difference already used in the renewable energy sector. These are accompanied by the possibility of linking the sector to the **proposed reform of the emissions trading system (ETS)**[17], which in the coming years will gradually include waste incineration plants in its scope, and which can therefore **become an additional financing channel for the industrial transition of recycling and promote the circularity of the material**.

Finally, the completion of the financial architecture provides for the establishment of a **European public platform dedicated to the sector** and the connection with **the Savings and Investment Union**[18], so as to mobilize long-term private capital towards a sector that, due to its size and industrial maturity, presents the conditions to become a reference use case for the entire European strategy for financing competitiveness.

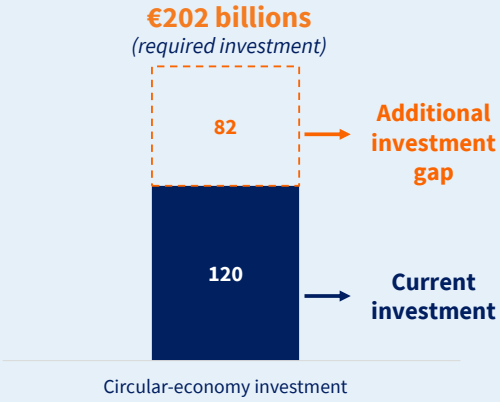


Figure 9. Annual investments in the circular economy in the EU and estimated investment gap (€ billion), 2025-2040. *Source: TEHA Group elaboration on data from the European Commission and the European Investment Bank, 2026.*

[16] European Commission, Green Deal Industrial Plan, 2026.
[17] European Commission, proposal to amend Directive 2003/87/EC and Decision (EU) 2015/1814, Phase 5, 17 July 2026.
[18] E. Letta, Much more than a market - Speed, Security, Solidarity, April 2024.

Conclusion

The full results of the Study, with a detailed analysis of the model and the proposed policy actions, are presented in the full Strategic Report "**A new European industrial policy for the Circular Economy**". The priorities summarised here represent the contribution of TEHA Group and CONAI to the European debate on the **industrial future of circularity**.

The study starts from the **asymmetry between the current regulatory framework and industrial reality**, recognizing in the next two years a unique momentum to bridge this gap and make **circularity** a real engine of **competitiveness**, **strategic autonomy** and **growth**.

For this to be successful, a real new industrial policy is needed, which recognizes in the recycling chain what it is in all respects: **an economic infrastructure that generates 555 billion euros in annual impact** and **over three million local jobs**, a system that **returns 1.66 euros to society for every euro spent**, and an essential link **in European industrial supply chains**. Preserving this value - even before increasing it - is already a strategic priority.

The model proposed by the Study indicates that this result cannot be obtained by forcing the homologation ofthe twenty-seven national systems, but by building the conditions - of governance, market, finance - so that different systems can work together in a **Single Market of secondary raw materials based on mutual recognition, activation of investments, industrial symbiosis and strategic autonomy**. It is an approach that explicitly recognizes the specificities of materials, Member States and industrial supply chains, and that for this reason requires calibrated tools rather than single solutions, in line with the principle of subsidiarity typical of the European Union. **The responsibility that derives from this is twofold**. The European institutions will have to take advantage of the regulatory window opened by the concurrence of the four legislative acts under negotiation - the Circular Economy Act, the European Product Act, the Critical Raw Materials Centre and the reform of public procurement - to translate the conditions that the model identifies into common rules. The players in the supply chain will have to support the process, so that European circularity can move **from a logic of compliance to one of investment**.

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