

## POSITION PAPER

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### RECYCLING FOR A RESOURCE EFFICIENT EU ECONOMY

European Recycling Industries' Position on the challenges of secondary Raw Materials Markets and policies needed to enable resource efficiency

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#### Introduction

The benefits of recycling become increasingly visible and valued as one solution to Europe's raw material challenges. Through initiatives by industry and legislative measures such as EU-wide recycling targets for waste materials and products, significant amounts of waste have been diverted from landfills and used as raw materials in the manufacture of products. Several European manufacturing sectors base a significant and increasing part of their production on secondary raw materials.

At the same time, there is still a potential that is not collected but incinerated or landfilled. A significant volume of recyclable waste is collected in Europe but is exported to third countries to be recycled/recovered/treated there. This development poses challenges to the closing of the recycling loops and therefore the European goal of becoming a recycling society.

With this position paper, the undersigning recycling sectors would like to explain the functioning of the recycling value chain and the challenges which the recycling sectors face today. They make concrete proposals for policies that would be needed to optimise the functioning of the recycling chains and thereby their contribution to a resource efficient Europe. A detailed description of the material specific value chains and of the undersigning organisations can be found at the end of this document.

## 1. The Recycling Value Chain

Recycling is more than the collection of recyclable waste materials. It is the result of a series of steps which are part of the recycling value chain: collection - pre-processing (including when appropriate dismantling) – processing (including extraction of contained material from recyclable waste)– processing into a new product/material. These value chains can slightly differ from one sector to another. The specificities of the materials and value chains may call for sector-specific policy approaches to improve recycling and increase the resource efficiency of the European economy as a whole.

Recycling is a highly efficient way of reintroducing valuable materials into the economy. It delivers real benefits as it:

- Addresses resource efficiency
- Lowers energy consumption and hence CO2 emissions significantly
- Reduces environmental impacts on water and air;
- Decreases EU's dependency on raw material imports.
- Helps move from waste management to material management
- Creates and maintains jobs in Europe

Europe has come a long way to improve its recycling rates and has thereby reduced landfilling of waste. More recycling can be achieved provided the appropriate framework conditions are in place.

## 2. Challenges for Europe's Recycling Industries

The undersigning sectors represent key European Industries using secondary raw materials as a substantial part of their feedstocks. There is still a potential for them to increase their recycling activities, even if it varies between the sectors for different reasons.

The obstacles to producing a higher share of paper, plastic, man-made fibre, ferrous and non-ferrous metals products from secondary raw materials are the following:

- Insufficient and contradictory policy support for closing the loops
- Subsidies for the use of recyclable and renewable material for energy recovery
- Insufficient recyclability requirements for converted products
- Suboptimal end-of-life collection schemes
- Shortage of secondary raw material due to exports to non-European countries partly due to illegal shipments of waste
- Lack of level playing field worldwide
- Technological hurdles to recycle increasingly complex products
- Landfilling of recyclable waste
- Inconsistencies in legislation in the field of waste, products and materials

The challenges for the different sectors are multiple; one of them however is a threat to the entire European Recycling Industry: the massive exports of secondary raw materials outside the EU. Secondary raw materials exported outside the EU represent not only a loss of the material (often poor efficiency of the recovery process with regard to the intended raw material) but also a loss of the embedded energy: producing new products based on virgin/primary materials only is, in general, more energy consuming hence impacting negatively on the EU's climate and energy goals. In the case of metals, for example, recycling provides substantial energy savings - for some industries up to 95% energy saving - making complete productive chain of metal products a low

impact generative process in which primary process route (from virgin materials) is balanced by secondary process route (from recycled materials). The same applies to staple fibre spun out of PET bottle flakes, compared to virgin PET. Additionally, exports of wastes and secondary raw materials may lead to a higher environmental burden in a global perspective.

The significant exports of European secondary raw materials are facilitated by:

- a strong demand for resources from emerging markets
- relatively cheap east bound shipping costs
- substandard environmental management of recycling processes outside Europe
- insufficient control at borders
- lack of quality of the collected material.

In the undersigning sectors' view, such exports are in opposition to the European Union's objective of a resource efficient Europe.

### **3. Concrete proposals for policies needed to optimise recycling industries' contribution to a resource efficient Europe**

To optimise recycling in Europe from our current levels, targeted policies are needed. To enable the European industries using secondary raw materials to recycle even more, to take account of the full value chains and to close the recycling loops, **the undersigning European recycling industry sectors:**

- call for a sound implementation and enforcement of existing legislation. A sound implementation of the waste Directives/Regulation would ensure:
  - separate collection at source (separately from each other) of paper, metal, plastics and glass by 2015
  - that recycling outside Europe would take place with environmentally sound management of secondary raw materials as is the case in Europe
  - the proximity principle of recycling secondary raw materials in efficient plants at high quality close to their source whenever possible and relevant
- call for better enforcement of the Waste Shipment Regulation with a view to curbing illegal shipments of waste. The work of Impel and customs authorities should be supported, e.g. through a distinction of second-hand goods and new goods at customs so as to help them improve target controls.
- call on the European Commission to propose a ban on landfilling of recyclable waste.
- call on the European Commission to include recyclability criteria for the product groups covered by the eco-design directive today and product groups that might be covered in the future. Optimised recyclability of products would:
  - contribute to resource efficiency and lower environmental impacts
  - take a value chain approach to the minimisation of environmental impacts at all stages of the life-cycle
  - facilitate industrial ecology

- call for actions to ensure that recycling takes place in efficient facilities rather than in sub-standard facilities, e.g. by a certification scheme for pre-processors and recyclers making sure recycling takes place in an “environmentally sound manner” (ESM).
- call on the European Commission to stimulate producer responsibility and explore new concepts or tools in full cooperation with the stakeholders concerned so as to avoid a shift in impact and ensure that the instrument delivers.
- call on the European Commission to investigate the substantial subsidies given by some third countries, such as China, to secondary raw materials using companies with respect to their compatibility with WTO rules and take appropriate measures.
- remind that requirements such as recycled content should be considered cautiously as a general tool, as they may lead to inefficiencies in the supply chains (e.g. a paper producer located in a remote forest area would have to import paper for recycling from urban areas to ensure its product meets the recycled content requirements, hence leading to additional transport and lack of paper for recycling elsewhere). The same applies to non-ferrous metals that can be recycled again and again without losing their properties so the objective should be to ensure that they are recycled at the end-of-life. However, they can be an effective tool in specific sectors.
- call for a recycling strategy aiming at recycling secondary raw materials with the highest material purity and efficiency. When appropriate, recycling should take place close to the source. The high investments needed for metal recycling imply that the priority should be to ensure efficient recycling as opposed to proximity.
- call for effective recognition of the benefits of recycling in other policies than waste policy, such as the energy policy. Similarly to the waste hierarchy, other policies should promote the cascading use of raw material to support added value and job creation before using the resources as a source of energy. Energy efficiency and resource efficiency must become key criteria in raw materials impacting policies.
- Call for adjustment of policies and legislation to avoid inconsistencies and double or contradictory legislation that hinders recycling processes in order to maximize the use of waste and secondary raw materials, and as such saving natural resources.

Recycling is a key driver for resource efficiency. To optimise recycling in Europe from our current levels, targeted policies are needed. The proposals listed above would enable the European industries using secondary raw materials to recycle even more, thereby supporting the full value chains, closing the recycling loops and contributing to the EU 2020 targets and the objective of a resource efficient Europe.

## 4. Material specific information on recycling and supply chains

### 4.1 Paper recycling in a nutshell

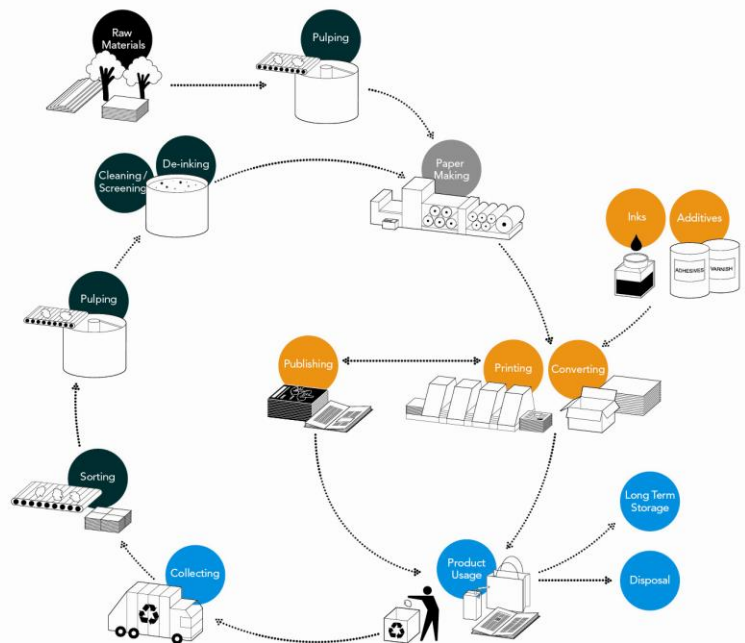
The recycling rate in Europe reached 68,9% in 2010. The total amount of paper collected and sent to be recycled in paper mills came to 58 million tonnes. A net volume of 8,4 million tonnes of the total 58 million tonnes was exported for recycling in third countries outside Europe. Overall, 54% of the fibres used in new paper and board products are sourced from the “urban forest” of used paper products, 46% are fresh fibres from wood that need to be constantly injected in the fibre loop as:

- not all products are suitable to be manufactured from recycled fibre
- the fibre can only be recycled a limited number of times
- one fifth of paper products are not recyclable or not collectable (e.g. archives).

#### Supply chain: Paper

### Paper Value Chain

This flowchart illustrates the different tasks involved in paper recycling, creating the paper value chain. The manifestation of the paper value chain is the European Recovered Paper Council (ERPC).





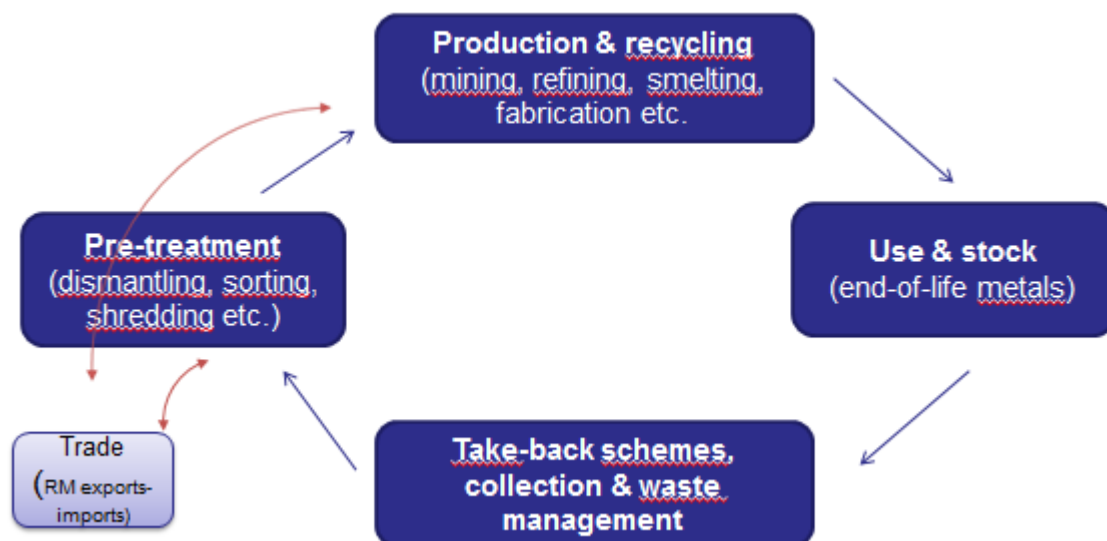
## 4.2 Supply chain: Non-ferrous metals

As they do not lose their intrinsic properties during recycling, metals can be used and re-used, again and again. The process can be broken down into three separate, but highly interdependent, steps: collection, pre-treatment and recycling.

1. The metals in products having reached their “end-of-life” are collected by thousands of micro, small and medium-sized private companies, municipal waste authorities and consumer take-back schemes (e.g. cans).
2. The metal scrap undergoes a variety of pre-treatment operations (dismantling, sorting, shredding, grouping by category, etc.), ideally according to the quality requirements of the final recyclers.
3. The waste and scrap materials are granted with another life through complex refining processes that will produce pure metals again.

Recycling is multi-metallic by nature and requires a much more complex operation in order to maximise recovery yields as well as protect the local environment and workers’ health. This results in the number of players involved in the production and recycling of metals being very small compared to the multitude of collectors, traders and pre-treatment processors (ca. tens as compared to thousands). Eurometaux, the voice of the European non-ferrous metal industry, represents these few industrial metal producers and recyclers.

Today end-of-life metals recycling rates range between below 1% and up to 95%. Approximately more than 50% of aluminium and copper, which are found in thousands of very different products, is being recycled (UNEP, 2011). The EU metal recycling industry has the potential to significantly increase recycling, provided that a policy framework is in place that allows EU players to compete effectively on what is a global market for raw materials.



### 4.3 Supply chain: Ferrous metals

Ferrous metals (i.e. steel) are produced through a complex productive process where the consumption of primary resources is counterbalanced by an extensive use of recycled ferrous scrap; as such, the integration of the two process routes may be one of the pillars on which recycling could further develop and broadened. Moreover, many secondary raw materials and waste are employed by other industries for producing products or services, feeding a working and producing chain covering many European industrial sectors. The use of ferrous scrap for producing a significant part of steel in the market means the involvement of a relevant number of players for ferrous scrap collection, recovering and bringing the recycled material back in the production chain. Steel is 100% recyclable and therefore contributes significantly to the long-term conservation of fundamental resources for future generations. Steels do not lose their intrinsic properties during recycling and can be re-used many times, theoretically infinite times, and it can be efficiently separated magnetically from other materials.



Source: Instituto Aco

#### 4.4 The plastics recycling value chain



#### Note to the editor:

The **Confederation of European Paper Industries (CEPI)** is a Brussels-based non-profit making organisation regrouping the European pulp and paper industry and championing this industry's achievements and the benefits of its products. Its mission is to promote the members' business sector by taking specific actions notably, by monitoring and analysing activities and initiatives in the areas of industry, environment, energy, forestry, recycling, fiscal policies and competitiveness in general. Through CEPI, the paper industry increases its visibility and acts on emerging issues, making expert and constructive contributions on behalf of the industry.

Its collective expertise provides a unique source of information both for and on the industry; coordinating essential exchanges of experience and knowledge among its members, the ability to provide technical assistance to legislators and to identify independent experts on specific issues. Through its 19 member countries (17 European Union members plus Norway and Switzerland) CEPI represents some 700 pulp, paper and board producing companies across Europe, ranging from small and medium sized companies to multi-nationals, and 1020 pulp and paper mills. Together they represent 24% of world production.

Website: [www.cepi.org](http://www.cepi.org)

**CIRFS: European Man-made Fibres Association** is the representative association for the European man-made fibres industry, representing over 85% of the European man-made fibres production volume. Europe is still the second largest man-made fibres producer, with an output of over 3 million tonnes, employing about 25.000 people. The innovation spending is about € 200 m/year. The man-made fibres industry is at the beginning, and is an essential part of the European (industrial) textile supply chain with a turnover of about €170 billion, 128.000 companies and employing 2 million workers. In Europe, 70% of polyester staple fibres are made out of recycled PET-bottles. Man-made fibres are used in many high tech applications used to save on energy. Without man-made fibres many of these high tech applications would simply be impossible.





In many of these applications, man-made fibres help save much more energy in the use phase than is needed for their production.

**Eurometaux** is the Brussels-based EU association of the non-ferrous metals industry, representing the main EU and international metals producers, EU and international metal commodity groups and national metal federations. The industry covers base metals (Al, Cu, Pb, Ni, Zn, Sn), precious metals (Au, Ag, PGM's) and technical metals (e.g. Co, W, Cr, Mo, Mn), manufactured from both virgin and recycled raw materials.

- **The non-ferrous metals industry is indispensable for modern society.** Thanks to their intrinsic properties – including durability and recyclability - non-ferrous metals are indispensable to meet essential societal needs and to build a low-carbon economy.
- **Non-ferrous metals contribute to the European - and global - creation of wealth and jobs:** they represent 2% of EU GDP and create **450,000 direct jobs and over 1 million indirect jobs** in Europe. Their use in high tech and high added-value activities makes them very valuable to the EU's economy and competitiveness.
- **The non-ferrous metals industry contributes to resource efficiency** by enhancing the in-use phase of products and also thanks to high recycling rates ranging between 30% and 95%, depending on the metals and their use. Primary and secondary raw materials are complementary, as secondary raw materials cannot meet the growing needs of a sustainable economy on their own.

**EuPC** is the leading EU-level Trade Association, based in Brussels, representing European Plastics Converters. Its powerful European Plastics Network exists to support the beneficial use of plastics worldwide, especially providing plastics converting companies with a voice in European legislation.

EuPC now totals about 51 European Plastics Converting national and European industry associations; it represents close to 50,000 companies, producing over 45 million tonnes of plastic products every year.

The European plastics industry makes a significant contribution to the welfare in Europe by enabling innovation, creating quality of life to citizens and facilitating resource efficiency and climate protection.

More than 1.6 million people are working in about 50,000 companies (mainly small and medium sized companies in the converting sector) to create a turnover in excess of 300 billion € per year.

**EuPR** represents National Associations and Individual Member Companies covering 80% of the European market. We focus on the promotion of plastics recycling and the creation of conditions which enable profitable and sustainable business.

**Eurofer**, founded in 1976, and located in Brussels, represents 100% of steel production in the EU. Its members are steel companies and national steel federations throughout the European Union (EU). The major steel companies and national steel federations in Switzerland and Turkey are associate members. The European steel industry is a world leader in its sector with a turnover of about EUR 190 billion and direct employment of about 360 thousand highly skilled people, producing 200 million tonnes of steel per year. More than 500 steel production sites in 23 EU Member States provide direct and indirect employment and a living for millions of European citizens.

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