

# PAPER RECYCLING

MONITORING REPORT 2011



European Declaration on Paper Recycling  
2011 - 2015

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## Paper is for Recycling

The first annual report of the third five-year period of the European Declaration on Paper Recycling is out. Since 2000, the European paper value chain has been committed to increasing recycling and to consciously removing elements that would hamper paper recycling in Europe.

**The new reporting template** offers more indicators giving insight to the wider context of paper recycling, as well as the already established figure on recycling rate and the related recycling volumes. New indicators show, for instance, a 40% reduction in specific CO<sub>2</sub> per tonne of paper produced in Europe.

**New heights** can be reported with the number of European countries exceeding a 70% recycling rate going up to 13 and the number of cycles a paper fibre goes through in the loop reaching, on average, 3.4 (compared to the global average of 2.4, based on a calculation method developed in France).

*Europe has the world's highest net imports of resources per person, and its open economy relies heavily on imported raw materials and energy. Secure access to resources has become an increasingly strategic economic issue, while possible negative social and environmental impacts on third countries constitute an additional concern.*

**- EU Roadmap to Resource Efficiency (2011)**

Paper recycling is truly an industry “made in Europe” unlike any other and – in line with EU policies – should be safeguarded to remain so. Where the paper industry was a pioneer in recycling – implementing a recycling society in Europe decades before the term was coined – it is now taking the challenge of using even more carefully not only fibres but all the materials we have in our hands: even rejects from paper recycling can still become a valuable resource. This project, applying industrial symbiosis, is taking shape in the paper industry.

**A new development in the recycling rate calculation** ensures not only the quality of the calculation but also the quality of the underlying data collected by CEPI, securing the highest reliability of the recycling rate. With this, the European paper industry is confident when reporting to its stakeholders the quantitative progress made.

**Launching the 2011-2015 Declaration** on Paper Recycling, the European Commissioner for Environment, Janez Potočnik, praised the exemplary action taken by the paper value chain during the first 10 years of voluntary commitments. The new commitment, it seems, is set to raise the bar, keeping the valuable elements from the past and adding new ones.

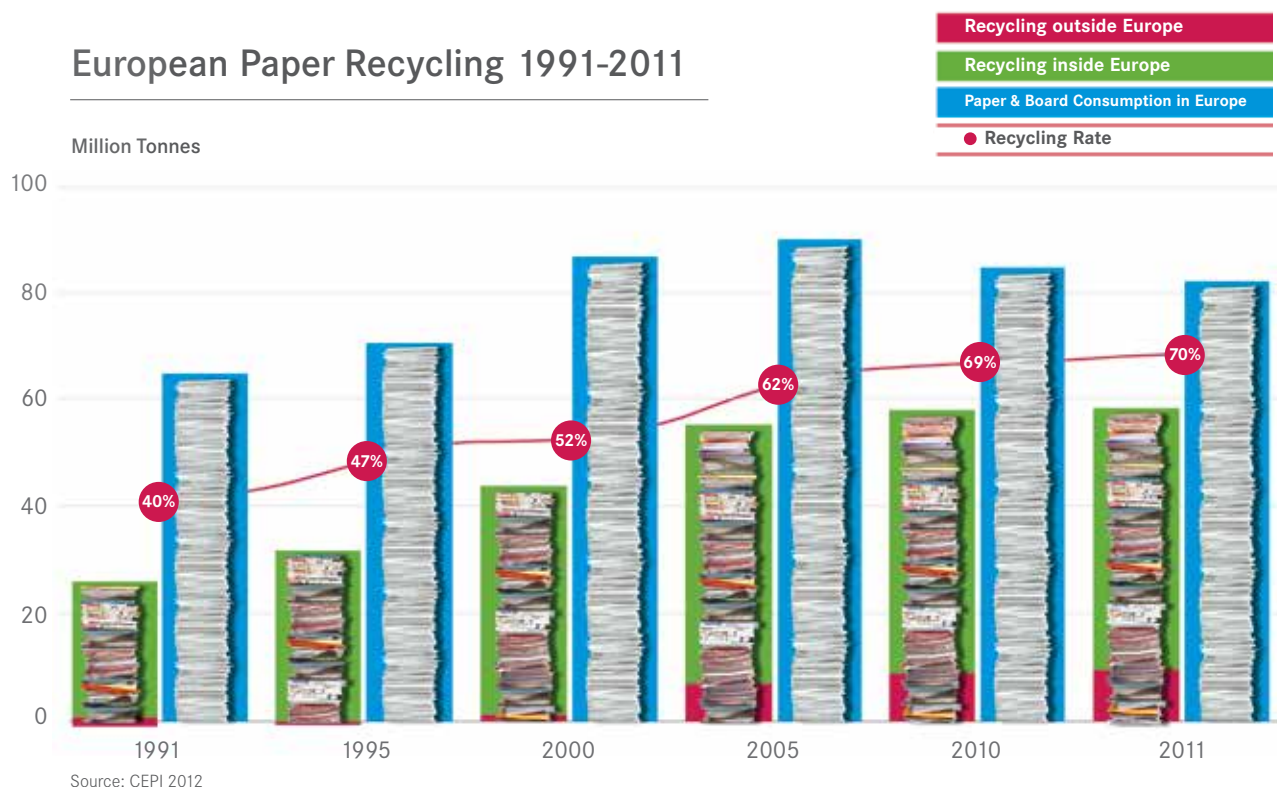


# Recycling Rate 2011 - 70.4%

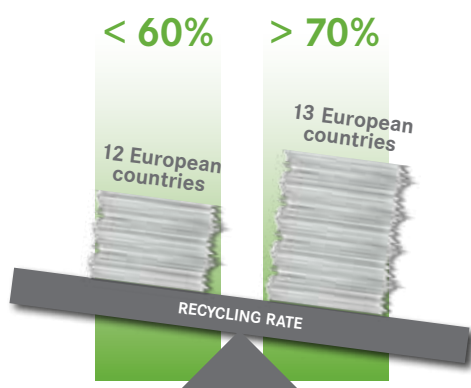
The recycling rate in Europe reached **70.4%** in 2011. The total amount of paper collected and recycled in the paper sector remains stable at 58 million tonnes, the same as in the previous years, but with an increase of 18 million tonnes since 1998, the base year for the first voluntary commitment in the paper value chain set itself for increasing recycling in Europe.

A net volume of 9.2 million tonnes (or 15.9%) of the total 58 million tonnes was imported for recycling by third countries outside the commitment region of EU-27 plus Norway and Switzerland.

## European Paper Recycling 1991-2011

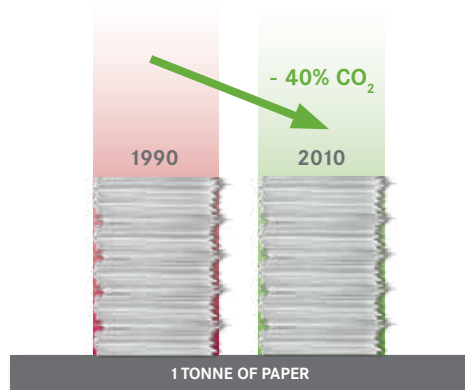


13 European countries exceed the 70% recycling rate, 12 European countries are below 60% (2011)



Source: CEPI 2012

Reduction of specific emissions of CO<sub>2</sub> per tonne of paper production in Europe.



Source: CEPI 2012



# Progress in Qualitative Targets

By joining the European Declaration on Paper Recycling, European Recovered Paper Council (ERPC) members committed themselves to carrying out qualitative actions, in particular by using the ecodesign of paper products, to improve the recycling rate by 2015. The members represent 12 sectors along the paper value chain. In 2011, as in previous years, ERPC members dedicated a substantial amount of their time to several initiatives that facilitate the recycling process and increase recycling activity.

## COLLECTION

The EN 643 European List of Standard Grades of Recovered Paper and Board has been reviewed and a revised version has been submitted for adoption to CEN, the European Committee for Standardisation, by ERPA, the European Recovered Paper Association, CEPI, representing the paper recycling mills in Europe, and FEAD, representing the waste management companies (not a member of ERPC). INGEDE, representing the deinking industry, contributed to the revision work with expertise on deinking grades and is also a member of the relevant working group at CEN.

A draft standard has been adopted by CEN and the final revised European List of Standard Grades of Paper and Board for Recycling, EN 643, will be published by Spring 2013.

The self-adhesive labelling industry, presented by FINAT, has started pilot studies to coordinate a collection of various outlets of self-adhesive labelstock in order to obtain sufficient volumes. FINAT has been very active in communicating existing solutions and the collection requirements of these.

FINAT relaunched its recycling committee in 2011, focusing on improving the recycling rate of secondary materials of the self-adhesive labelstock industry. The committee has so far focused on establishing the main challenges concerning recycling and the solutions available.

Further progress was made by the relevant stakeholders of the paper value chain to develop end-of-waste criteria for waste paper in accordance with Waste Directive 2008/98/EC in view of encouraging collectors and processors to fulfil technical and environmental requirements and transform “paper for recycling” into high quality products ready for use. End-of-waste status is intended to encourage the production of better grades and facilitate their flows throughout the EU.

## ECODESIGN

The ERPC adopted and published a Scorecard for the Removability of Adhesive Applications, an Assessment of Printed Product Recyclability<sup>1</sup>. It is a science-based tool for assessing the ability of solid (non-water soluble or non-dispersible) adhesives to be removed through screening during paper recycling. High removal efficiency through screening can only be achieved if adhesive applications disintegrate into particles of a sufficiently large size. The smaller the particles are, the lower their removal efficiency is.

Removability is an important starting point in this area and the ERPC has already agreed to continue investigating other recyclability aspects of adhesive applications. ERPC members INGEDE, FEICA and FINAT, in particular, were active in developing the Scorecard.

## RESEARCH AND DEVELOPMENT

CEPI published a report indicating over 20 ways of making use of recycling residues produced in the paper recycling process. With the increasing recycling rate the fibre yield from recycling is bound to decline, producing continuously more reject. As prices of paper for recycling and cost of reject management are ever increasing, the move to seeing the value of reject supports increasing paper recycling in Europe also economically.

INGEDE signed a cooperation agreement with Digital Print Deinking Alliance, DPDA, established a technical committee and launched a baseline study on the deinking of inkjet prints. After evaluation of the study's results, follow-up projects are planned.

## EDUCATION AND INFORMATION

After the revision of the Waste Directive in 2008, the European Commission indicated that “recovered paper”, a term coined in 1995 to indicate the valuable nature of “waste paper” as a secondary material, was no longer acceptable in light of the definitions of the new Directive. CEPI, ERPA and FEAD agreed on a new name: “paper for recycling” in 2011. A self-explanatory name for everyone, including the citizens from the beginning of the recycling chain up to the final recycling in the paper mill. A beloved child has many names! The ERPC website was updated and so was its address: [www.paperforrecycling.eu](http://www.paperforrecycling.eu).

The adhesive manufacturing sector, represented by FEICA, continues to educate its stakeholders about the use of the ERPC Scorecard for the Removability of Adhesives Applications and provides explanations on the impact of adhesives applications in paper recycling. To this end, FEICA also maintains a close dialogue with the paper recycling industry.

The printing ink manufacturing sector, represented by EuPIA, continues to promote the ERPC Deinkability Scorecard aimed at enhancing the recyclability of printed graphic paper into new graphic paper. Following its commitment to provide advice as to the suitability of recycled material for certain applications, EuPIA issued three statements related to specific aspects of the use of recycled paper and board as food packaging ([www.eupia.org](http://www.eupia.org)).

FINAT has launched a brochure and recycling portal on its updated website ([www.finat.com](http://www.finat.com)), offering a one-stop shop for information on recycling of secondary label material. In addition, FINAT has presented the topic at various conferences and seminars.

INGEDE spoke about digital print deinking at an international seminar in Apeldoorn, at the printing future days in Chemnitz and at the IMI inkjet printing conference in Lisbon. INGEDE also gave several presentations on the Scorecard for the Removability of Adhesive Applications.

<sup>1</sup> <http://www.paperforrecycling.eu/uploads/Modules/Publications/Removability%20Adhesive%20Applicationsfinal.pdf>



# Paper Industry Pioneering the Recycling Society



Paper has been recycled for about two millennia and the method of removing ink from old papers (deinking) in the recycling process was patented in the early 19th century in England. Few people know that the origin of the recycling logo, one of the most recognisable graphic symbols in the world, lays in the paper industry.

Since the late 1960s, a new environmental awareness emerged across the US and in April 1970 the very first Earth Day was held. At about the same time, Container Corporation of America (CCA, now RockTenn Company), a paper recycler and paperboard packaging manufacturer, sponsored a contest to create a design that would symbolise the recycling process. CCA would use the symbol to identify packages made from recycled and recyclable fibres, and to promote paper recycling as an effective way to stretch our natural resources. At that time, CCA was the largest paper recycler in the US.

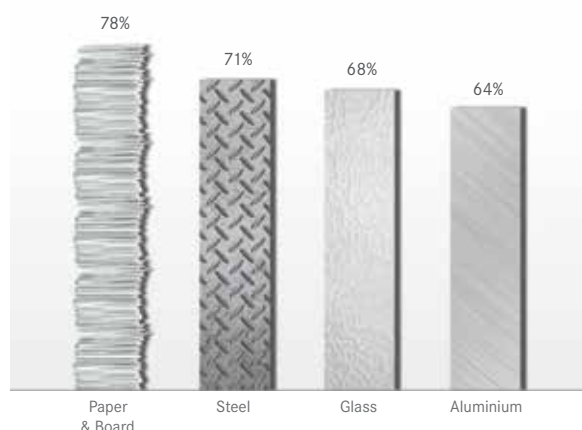
The winner was a freshly graduated architect and graphic designer **Gary Dean Anderson** (1947) who produced a hand-drawn design we now know as the recycling symbol. Anderson was inspired by his interest in origami and particularly in art based on the Mobius Loop, a mathematical form that can be produced by gluing together the ends of a strip of paper that have been given a half twist; an ant walking along the length of this strip would return to its starting point having traversed the entire length of the strip (on both sides of the original paper) without ever crossing an edge.

Anderson has been involved in planning projects in many European countries throughout his career and is still active in environmental issues, design and urban planning.

(Source: Tappi, *The Story Behind the Recycling Symbol*)

## 2010 Packaging recycling rates in the EU

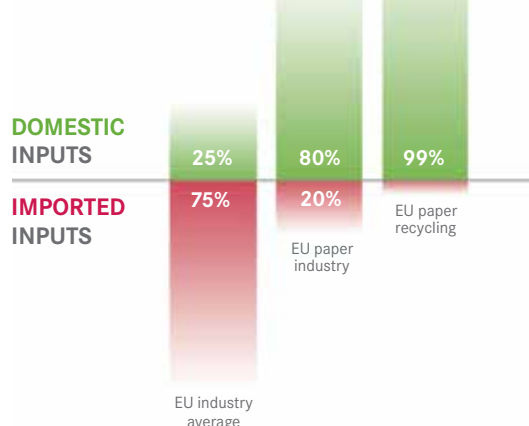
*Paper and Board is the most recycled packaging in Europe!*



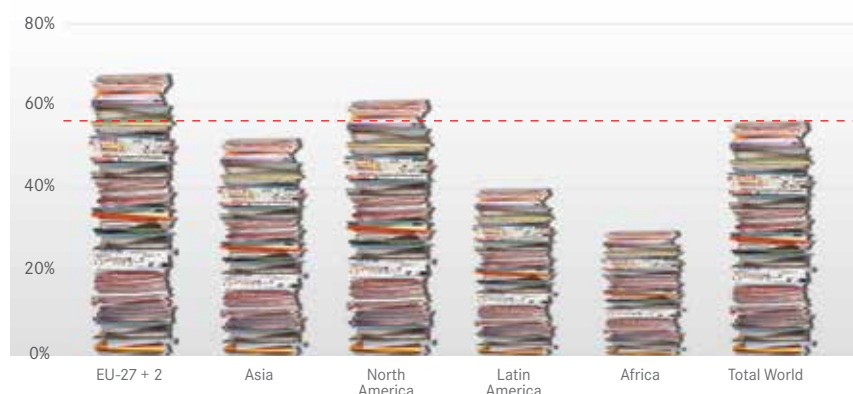
Source: European steel, glass and aluminum packaging associations, CEPI 2012

## Closing the loop in the EU

*Paper is based on domestic raw materials!*



Source: European Commission, CEPI 2011

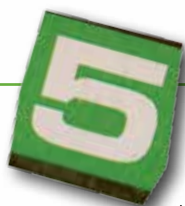


Source: CEPI, RISI 2012

## Recycling Rate in World Regions in 2010

*Europe is the paper recycling champion!*

# European Paper Recycling Awards 2011



A significant amount of practical, often not very visible work is done in companies, in research and by various civil society groups to improve paper recycling. Every two years the European Recovered Paper Council calls for candidates to be recognised in their efforts in innovative projects that enhance paper recycling in Europe and hopes to inspire others to copy good practices.

A third edition of the awards was handed out in September 2011 to three winners during a ceremony held at the European Parliament in Brussels: 'Be Part of Birmingham's Paper Chain', a joint project by **Smurfit Kappa Recycling UK** and **Birmingham City Council** was awarded in the category of Information & Education. Two winners were awarded in the category of Technology Improvement and R&D: "Project Clean" aiming to improve recycling of beverage cartons by **Stora Enso** and **Palwaste Recycling** in Barcelona and "New Possibilities for Process Control by NIR Monitoring of Recovered Paper" by the German

research centre **PTS**. Applications received for all past awards (2007, 2009 and 2011) can be found on the ERPC website as a collection of good ideas to inspire others.

"Recycling is an increasing part of our daily lives and, by playing a part in recycling, society can help secure Europe's sustainability for the future. Paper recycling contributes positively to combating climate change, avoids disposal of waste and drives ecodesign of paper products, all of which are key elements of European environmental policies," explains **Mr. Ulrich Höke**, Chairman of the ERPC.

Awards were presented to the winners by **Ms. Soledad Blanco**, Director for Industry at DG Environment, Member of the European Parliament **Ms. Eija-Riitta Korhola** (EPP-ED, FI) and Mr. Ulrich Höke. The paper art awards were made by the Spanish artist, **Ms. Doris Martinez**.





**European paper  
recycling mills**

40% of all 1046 mills in Europe

Source: CEPI 2012



**In 2011, paper fibre  
was recycled 3.4 times  
on average in Europe**

Source: CEPI 2012



## Data Quality - 2011 data

The data used to calculate the recycling rate is collected by CEPI (Confederation of European Paper Industries). The data comes from the questionnaire sent by CEPI to its national member associations (Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, the Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom). The national associations supply the data, which they collect from their member mills and companies plus official sources where appropriate.

The data, including paper for recycling utilisation and trade plus paper and board production, trade and consumption for non-CEPI members of the EU-27 (Bulgaria, Cyprus, Denmark, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg and Malta) is obtained from Pöyry Consulting.

After submission to CEPI, the data may be adjusted by the source, in particular the trade data obtained from customs; CEPI will take the adjustments into account and the figures will be considered as final and published in the subsequent report (e.g. 2010 figures in this report). The 2010 recycling rate is confirmed at 68.7% (instead of 68.9%).

For certain countries<sup>2</sup>, where the calculation of the mass of recycled paper and board based on paper for recycling utilisation and net trade has not produced a result which is considered to be an adequate reflection of reality, recycling has

been based on actual paper and board collection for the specific purpose of recycling. This alternative methodology is mainly called for by the relatively high trade volumes in the Netherlands, which complicates the exercise of distinguishing domestic utilisation from trade of paper for recycling. It should be noted that this change has a reductive impact on the overall recycling rate as the usual calculation method would overestimate actual recycling in the Netherlands. Other countries<sup>3</sup> have adjusted paper and board consumption figures with the opposite impact.

All historical annual recycling rates have been recomputed based on the revised calculation methodology.

CEPI has had an external verification of the recycling rate calculation since 2000. See Assurance Reports 2006-2010 by PricewaterhouseCoopers and 2000-2005 by Pöyry in the respective Annual Reports. For the next five-year period CEPI has chosen to work with Ernst & Young to further improve the data quality.

<sup>2</sup> Finland, France, the Netherlands, Sweden, UK.

<sup>3</sup> Belgium, Finland, the Netherlands, Slovenia, UK.

## Signatories



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



[www.erpa.info](http://www.erpa.info)



[www.ingede.org](http://www.ingede.org)



[www.fepe.org](http://www.fepe.org)



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