The Facts of our Value Chain

Facts, figures and arguments to challenge common environmental myths that unfairly hurt the reputation of our collective industry.

european mail industry platform emip

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industry platform

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Foreword

The climate is influenced by many factors from greenhouse gases[1] and aerosols[2] in the atmosphere[3] to the energy coming from the sun and the reactive properties of the Earth's surface. These changes have a warming or a cooling effect on the planet because they modify the amount of solar energy that is retained or reflected back to space.

The debates are continuing within the scientific world on the influence of the human race on global warming. As a responsible industry however, the different sectors of the written communications value chain all believe and acknowledge that:

- Global warming is a reality,
- Human activity is one of the root-causes of this phenomenon.

Along with many other industries, we are taking our share of the responsibility for global warming. Our collective industries have invested millions of euros restructuring their activities, optimising processes, adapting purchasing policies and exploring new technologies to reduce our dependence on traditional carbon-intensive energies. New initiatives are also launched every day as we strive for continuous improvement. By mitigating the harmful impacts and by-products of our industries, we will continue to support a better and cleaner world – which is something we should all be proud of.
Despite these actions, the reputation of our value chain continues to suffer. Constant and targeted attacks have affected the reputation of our industry negatively. The www.shrinkpaper.org initiative is one of the latest examples of the coordinated and misleading attacks on our sector. The initiative states that "Paper production and use is directly linked to grave negative impacts on forests, biodiversity, on water resources, on the global climate and on human rights, through irresponsible producers". These statements have been widely reported and completely believed by many commentators, and the general public at large. In contrast, a UN statement that 'Paper and print are part of the solution to mitigate climate change[4]' is never reported and therefore never heard by the general public.

We must all take our share of responsibility for our poor reputation. As a very fragmented value chain, we have not taken the time to understand each others' business nor the issues that others face. This must change. Each of us must spend some time to learn the value chain so we can highlight its positive aspects. The European Mail Industry Platform (herein known as EMIP) can play an important role in achieving this objective.

EMIP is a PostEurop initiative that was started in 2006. The objective of the group is to coordinate business activities to grow the written communications sector and thus support all industries involved in the paper mail value chain. EMIP comprises representatives of specific organisations who actively participate in the European communications sector.

The aim of this document is to help you, as a stakeholder, understand better the value chain of your products and/or services. Furthermore, the document provides clear, concise, and objective facts and examples that demonstrate the "green" activities of each part of the value chain. Please distribute this document to your colleagues in your industry so that we can all defend and promote our industry, challenge the myths and support each other for for the benefit of our value chain.

Executive Summary

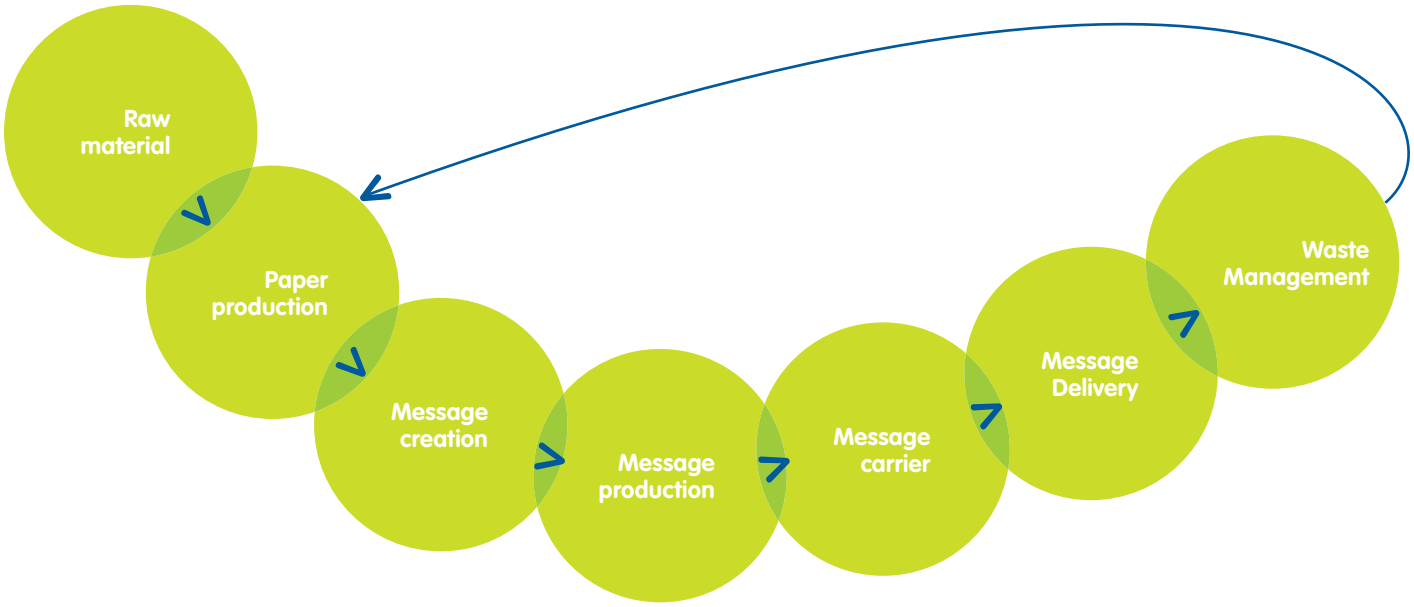
There is growing consensus amongst the general public, politicians, scientists, business customers and others that current climate changes and behavioural patterns are threatening the environment. Especially increasing levels of carbon dioxide (CO2) in the atmosphere, which are the cause of global warming, are causing concern. In general, the paper mail value chain in Europe recognises that its business activities create CO2 emissions.

Nevertheless, concerns over the emissions must be taken into context. All business activities create CO2 emissions – some more so than others. However, to avoid weakening European industries and local communities, it is also important to recognise the work and efforts undertaken so far by industry to reduce its impact on the environment. A lack of understanding and/or unwillingness to understand is highly likely to have contributed to volumes losses, reduced customer loyalty and increasingly restrictive regulation leading to significant (economic and other) losses.

The paper mail value chain has a collective revenue stream in Europe of over 300 billion euros and is responsible for employing nearly seven million Europeans5. In the battle to become environmentally sustainable businesses, these industries have invested millions of euros to investigate and take actions to mitigate their impact on the environment.

Despite this massive undertaking, our value chain remains one of the main targets of negative commentary on environmental issues. The goal of this document is to provide all stakeholders of the European Mail Industry with objective data and arguments concerning their actual environmental impact and their efforts to reduce it.

In order to reach this goal, seven subsets of the mail industry sector have been analysed thoroughly.



The forestry industry has become a leader in developing programmes that protect its resource base.

RAW MATERIAL: THE WOOD PRODUCTION AND FORESTRY INDUSTRY

Criticisms are voiced against the European paper based communications industry that it destroys (ancient[6]) forests to create products such as mailings, brochures, magazines, reports and envelopes. Research shows that these claims are unfounded as most of the world's deforestation occurs in tropical regions located in South America.

In Europe, the situation is very different. 44% of Europe is covered in trees. Excluding Russia, the figure amounts to 38%. The forest area has increased by 30% since 1950. In recent years (since 1990), forests in Europe have increased by 805,000 ha. Excluding Russia, this increase amounts to 1.5 M football pitches each year[7].

Despite the above facts, European forestry has become a highly sensitive subject for the general public. In response, the forestry industry has become a leader in developing programmes that protect its resource base. The UN reported in 2004[8] that forest health in Europe is good and improving. This statement is still being reinforced by forest certification standards plus accreditation of certification bodies which are clear examples of environmentally sound practices. These practices have been implemented by the industry, on one side to reduce the threat of forest degradation and, on the other, to enhance the biological diversity of Europe's forests[9].

PRODUCT: THE PAPER INDUSTRY

The industry is made up of around 800 companies and 1,200 pulp and paper mills with an annual turnover of 79 billion euros. It also employs 260,000 people.

It is often heard that paper production has a big carbon footprint when in fact, because of the carbon sequestration in forests and the carbon fixed in paper products, the paper industry has a lower than expected carbon footprint. In fact, an UN-led seminar on energy and forest products in October 2006 concluded that **paper and print are part of the solution to mitigate climate change[10].**

Trees are mainly harvested for the high-value clearwood used in other industries such as construction and furniture-making[11]. The raw fibrous materials used for paper-making depend on the grade of paper required – as 'fitness-for-purpose' ensures that the waste is minimised. On average[12]:

- 50% of the fibre for paper production in Europe is recovered paper.
- 50% is from new or virgin fibre, most of which is a by-product which may be potentially wasted:
  - 13%[13] comes from wood chips, saw dust and the tops of the harvested trees which are generally unmarketable.
  - 20-25%[14] comes from thinnings which is a management practice required during the lifecycle of a forest to ensure that the forest remains healthy and is safe from risk of fire.

The industry recognises the importance of recycled material in the paper-making process and continues to work on projects to increase recycling in Europe. The paper industry in Europe is a world-leader in recycling. In 2007, more than 64% of the paper and board consumed in Europe was recycled. Most of this material is reused again in the paper-making production process as it becomes raw material to produce new paper.

In fact, paper is recycled more than any other packaging material in Europe. Paper accounts for two-thirds of all the packaging material recovered for recycling – more than glass, metal, and plastic combined.

The industry is also a leader in supporting environmental projects. It strongly encourages the reuse of paper, in part as it has become a necessary raw material for new paper production.

The industry has also invested 470 million euros specifically in environmental-related Research and Development projects in recent years. From this investment, the industry has made material efficiency gains and has been able to move towards cleaner energy sources. The CEPI sustainability report (2007) reports that:

- CO2 emissions have been cut by 15% from 2003 to 2006
- Energy consumption has been reduced by 30% in Europe's pulp and paper mills.
- Of the energy consumed today, 54.5% used in European paper mills is renewable biomass (and biomass is carbon neutral). This is the highest percentage of all industrial sectors in the EU – and the industry expects to grow this to 56% by 2010.

CONTENT: THE COMMUNICATIONS INDUSTRY

The European direct marketing sector represents business revenues of over 75 billion euros and employs over two million people directly, and many more indirectly, within the EU. It is a commercial communications (strategic) tool which is of considerable importance to governments, fundraisers, charities as well as businesses and consumers.

The Direct Marketing industry aims to avoid or minimise waste. It achieves this by ensuring that campaigns are designed to maximise the response from recipients, that the database of names and addresses are accurate, clean and up-to-date which will minimise irrelevant or undeliverable items being sent out.

Criticisms such as direct mail is never opened can be refuted by research done in many EU countries showing that Europeans enjoy receiving direct mail. In Belgium, 97% of households check the post daily, 74% open the mail immediately. 80% of all DM is opened – with an average reading time of two minutes. In the UK, levels of opening (67%) and reading (45%) increased in 2005[15]. 70% of customers keep direct mail for later use.

Direct Mail is also not responsible for waste landfills. Across Europe, 90% of the paper used in DM campaigns is recycled and Direct Mail only accounts for 1% of the total paper consumption of an average country. The industry encourages consumers and local communities to recycle paper, so that it can be used again[16].

Targeting is an important feature of Direct Mail. Advanced targeting techniques and continuous improvements help to limit excess production. However, Direct Mail is also advertising for the product or brand, therefore non-response does not constitute waste. After consumers have used the information, the material becomes a recyclable product that can be used again and again if treated properly. This is no different from an empty drink can which is discarded correctly so that it can be reused.

Finally, besides efficient data management, the DM industry also makes efforts to reduce its impact on the environment by creating environmentally friendly designs and making the production of direct mail and promotions material more efficient.

PRODUCTION: THE PRINTING INDUSTRY

The European graphic industry employs over 870,000 people and has a turnover of more than 100 billion euros.

Critics say that printers want to print large runs to sell more to their clients. In reality their main objective is the satisfaction of customers. They have the necessary equipment to deal with small and large runs and they are leaders in the personalisation and customisation of printed products and variable runs.

Each printing process (traditional, digital) has its specific environmental impact with appropriate solutions. Digital printing is not necessarily better for the environment than traditional methods. Indeed, printing shorter runs with digital technology, although lowering paper consumption, is not always the most sustainable option.

Significant efforts have been made, such as the use of vegetable based inks utilising corn, walnut, coconut, linseed, canola and soy-bean oils (all renewable resources). This aids in optimising print processes to reduce waste, innovating new dampening solutions in offset printing, changing and reducing cleaning agents and improving energy management strategies.

CARRIER: THE BOXES AND ENVELOPES INDUSTRY

The paper and board converting industry generates revenues of 60 billion euros per annum and employs about 380,000 people in the EU (CITPA[17]).

The industry provides a fitness-for-purpose solution to ensure that the articles or products transported across Europe arrive safely (undamaged with no breach of privacy) at the final destination.

Paper and board packaging remains the EU champion for recycling. The industry currently recycles over 84% of its paper and board packaging – a level that easily exceeds the target set in Directive 94/62/EC on packaging and packaging waste (set at 60% by 2008).

A study initiative, the totally recyclable envelope, was conducted by the Envelution Forum[18] to develop guidelines for envelope manufacturers in Europe to produce a recyclable envelope. The study was conducted by the "Centre Technique du Papier" (CTP) following standard testing procedures.

The study found that it is possible to recycle envelopes manufactured from standard commercial components within the graphic paper recycling stream without any negative impact on the final recycling product. What is considered as unwanted material in the recycled graphic paper stream today can actually be a valuable source of quality cellulose fibre for recycling mills tomorrow.

The envelope industry has also been working with the European Stationary industry to develop an ecolabel for converted paper products. The objective of the 'Paper by Nature' ecolabel is to offer a clear and trustworthy reference for European consumers of converted paper products. The ecolabel, developed in conjunction with the paper industry and an NGO, sets criteria to be achieved for the entire process – from the raw material stage to the printing and conversion processes. For more information, please see www.paperbynature.com

DELIVERY: THE POSTAL INDUSTRY

The European postal sector generates revenues of 47 billion and employs more than two million people.

The industry remains one of the key infrastructural services to support the flow of information across Europe. The UPU (Universal Postal Union) confirms that the penetration of the mail network across Europe is almost 100%. In other words, mail operators are capable of providing communications to 100% of registered Europeans.

With their significant transport fleets, office buildings, post offices and sorting centres, the reduction of CO2 emissions is the most important environmental challenge for European public postal operators. To this end, postal operators in Europe have invested millions of euros in environmental initiatives in recent years.

However, criticism of the postal sector's environmental footprint is mostly directed at the product they are transporting and delivering to all 800 million European citizens.

Mail delivery comprises about 0.1% of the total household CO2 emissions in Europe[19] (14 kg of CO2)[20]. Yet at the same time, a single PC emits upwards of 495 kg of CO2 annually – more than two percent of household emissions[21].

Assumptions therefore, that electronic communication is better for the environment must continue to be challenged, as should the statement that both customers and companies should only use electronic communications. These statements are based on the erroneous perception that electronic communications have a lesser impact on the environment.

Other statements claim that people do not want paper door-to-door advertising (so called "junk mail"). However, studies in Europe tend to refute this concern. In Belgium alone, sales results at Carrefour can be up to 50% lower if door-to-door advertisements are not delivered or not delivered on time. Furthermore, 52% of households say they purchase products and services seen in advertising mail they receive[22].

Advertising mail is therefore, highly relevant to many Europeans. It provides a targeted intelligent communications medium that enhances customer relationships and creates value for all parties involved.

Finally, a large number of postal operators have undertaken significant steps to reduce their environmental footprint by introducing process optimisation, alternative distributions vehicles and fuels (energy sources), etc.

WASTE MANAGEMENT AND RECYCLING

The waste management and recycling sector has an estimated turnover of over 100 billion euros per year in Europe. It is labour intensive and provides between 1.2 and 1.5 million jobs[23].

The paper industry and its print media stakeholders[24] play an active role in supporting waste management and recycling objectives. The European Declaration on Paper Recycling has a recycling target of 66%

of paper consumed by 2010. Based on the CEPI data, this means that Europe will recycle 64 million tonnes of paper by 2010[25] (an increase of about four million tonnes on 2007 levels which is already eight million tonnes more than in 2004 when the original targets were agreed). Additional and tangible benefits have also been recognised as a result of the programme[26]:

- Pulping of recovered paper is less energy intensive: for example 0.4MWEh/tonne in recycling compared to 2-2.5MWEh/tonne in virgin production.
- Not land-filling the paper directly contributes to the climate as well, saving on Methane emissions from landfills.
- The 2010 target will save some an additional five million tonnes of CO2 compared to a scenario of "stagnation of recycling volumes".

CONCLUSIONS

In addition to reinventing ourselves through new products and services which provide the value that customers are seeking, including in terms of the environment, the incredibly complex communications sector will also need to defend itself better and to publicise the positive value proposition that our industry offers European citizens.

Positive aspects must be reinforced. Our industry provides an essential service to the citizens of Europe that is accessible to all businesses and individuals. Penetration of posts is almost at 100%, mail is highly valued by customers, consumers and businesses alike.

The paper-based communications industry contributes significantly to the well-being of all businesses, citizens and consumers across the whole of Europe. It has made and will continue to make considerable investments and efforts to improve its systems and processes. It operates on the basis of continuous improvement. As a result, it supports the well-being of European forests and minimises waste. The value chain can and must be collectively defended.

QUICK FACTS: TEN KEY FINDINGS FOR PAPER BASED COMMUNICATIONS

1. Forests are not being destroyed to produce paper-mail. On the contrary, the total forest area in Europe is now 30% larger than in 1950 - and growing. Including Russia, European forests cover 44% of the total land area and they are increasing by 805,000 ha per year. Excluding Russia, the figures are 38% of land area and increasing at 607,000 ha per year (1.5 million football pitches).

2. The paper industry rarely cuts trees for the production of paper[27]. Trees are mostly harvested for the high-value clearwood used in other industries such as construction and furniture-making. The raw fibrous materials used for paper-making in Europe on average comprise[28]:
   - 50% of fibre from recovered paper.
   - 50% new or virgin fibre, most of which is a by-product which may be potentially wasted:
   - 13% comes from wood chips, saw dust and the tops of the harvested trees which are generally unmarketable.
   - 20-25%[29] comes from thinnings which is a management practice required during the lifecycle of a forest to ensure that the forest remains healthy and is safe from risk of fire.

3. The paper industry does not have a big carbon footprint. Because of the carbon sequestration[30] in forests and the carbon fixed in paper products, the paper industry has a relatively positive (i.e. low) carbon footprint. The UN has said that the wood and paper industries could be part of the solution to mitigate climate change.

4. The paper industry does not consume immense quantities of fossil fuels. 54.5% of the energy used in European paper mills is green biomass, the highest percentage of all industrial sectors in the EU. The CO2 emissions from this biomass are neutral.

5. Mail represents 0.1% of the total household CO2 emissions[31]. It amounts to only 14 kg of CO2 per year based on an average number of mail items for a household of 727 per year[32]. This is equivalent to[33]:
   - One 70 km car journey or
   - Five Cheeseburgers or
   - Nine litres of milk or
   - 6.6 minutes of a transatlantic flight.

6. Paper used in communications should not end up in landfill. In 2007, more than 64% of the paper and board consumption was recycled in Europe. The industry recognises the importance of recovered material in the paper-making process and continues to work on projects to promote recycling in Europe.

7. Paper is recycled more than any other packaging material. Paper accounts for two-thirds of all the packaging material recovered for recycling — more than glass, metal, and plastic combined.

8. There is no such thing as 'junk mail'. Studies continue to reinforce the value of Direct Mail as a means of informing Europeans. After consumers have used the information, the material then becomes a recyclable product that can be used again and again if treated properly. This is no different from an empty can of coke which is discarded correctly so that it can be reused.

9. The Postal network is guaranteed to reach 100% of registered European citizens. The postal industry remains the only effective communication network that is guaranteed to reach 100% of Europe's citizens. This fact is enshrined in European law. The postal industry provides a strategically essential service that simply cannot be replaced.

10. Electronic communications are not more environmentally friendly than paper based communications.PC's account for more than two percent of annual household CO2 emissions[34]. This cost is always underestimated by commentators. A Swedish study confirmed that reading a newspaper released 20% less carbon than reading a newspaper online for 30 minutes[35].

AND WE ARE ALL INVESTING TO MAKE FURTHER REDUCTIONS

Introduction

The paper mail value chain has a collective revenue stream in Europe of over 300 billion euros and employs more than five million Europeans[36]. In the challenge to become environmentally sustainable, our industry (herein known as the 'mail value chain') has invested millions of euros to research and develop systems and processes to mitigate our impact on the environment. Despite this massive investment, our value chain remains one of the main targets of negative environmental commentary from NGOs, the media and politicians which affects our reputation amongst the main stream public in Europe.

To convince others that we are responding to environmental challenges, we need to be ready to respond clearly, concisely and consistently – with facts – to all commentators.

This document sets out to achieve this goal. Each chapter describes the specific industry involved in the value chain. It provides the environmental facts to correct the myths that stigmatise our industry and have been 'factualised' in recent years and then concludes by providing examples of initiatives developed in each industry. The simple nature of the average mail piece produced and delivered to the end consumer hides a complex chain of events that need to be defined before one is able to fully understand the paper mail value chain.

For the purpose of this document, the following subsets of the mail industry sector have been selected and will be dealt with in detail in the following chapters.

Raw Material

A. OVERVIEW OF THE WOOD PRODUCTION AND FORESTRY INDUSTRY

Globally, the total forest area in 2005 was estimated to be around 30% of the planet's land area, just under 40 million km^2. This corresponds to an average of about 0.62 ha (6.2km2) per capita, though it is unevenly distributed[37].

Region	Forest Area (000 ha)	% Area	% Global Forest Area
Africa	635.412	21,4	6,5
Asia	571.577	18,5	5,9
Europe	1.001.394	44,3	10,3
Nth/Central America	705.849	32,9	7,2
Oceania	206.254	24,3	2,1
Sth America	6.631.240	47,7	68,0
TOTAL	9.751.726	30,3	100,0

As highlighted, South America is the region with the highest percentage of forest cover (almost half of the land area) while Asia is the region with the lowest percentage of forest cover (less than 20% of land area). Almost half of Europe (including the Russian Federation and Siberia) is covered in forests, which account for about 10% of the world's total forest area.

On a global basis, the deforestation rate was estimated at 13 million hectares per year during the period 1990–2005. The rate of net loss is decreasing as a result of more positive balance between afforestation and natural expansion of forests in some countries and regions. In Europe, the forest area has in fact increased by an average of 805 000ha per year, or 8% of the total forest area, as sustainable management practices in the forestry industry have become standard practice (excluding Russia, this increase amounts to 607,000 ha or 1.5 M football pitches each year).

According to a Ministerial Conference on the Protection of Forests in Europe (MCPFE, 1998) sustainable forest management is defined as the stewardship that oversees the use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national and global levels, and that does not cause damage to other ecosystems.

Criteria for sustainable forest management adopted by MCPFE in 1998:

- Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles;
- Maintenance of forest ecosystem health and vitality;
- Maintenance and encouragement of productive functions of forests;
- Maintenance, conservation and enhancement of diversity in forest ecosystems;
- Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water); and
- Maintenance of other socio-economic functions and conditions.

B. FACTS

44% of Europe is covered in trees. Excluding Russia, the figure amounts to 38%. Even the lower figure remains well-above the global average.

Forests in Europe have actually increased by 30% since 1950 (FAO[38]).

Europe has developed a well-balanced definition for sustainable forest management. A UN report[39] has stated that the forest health in Europe is good and improving. Under such responsible management, forests are a renewable resource that can be regenerated almost indefinitely.

Sustainably managed forests are crucial to the longterm viability of the industry. Currently 3% (295 million hectares[40]) of the worlds' forests are certified under a credible forest certification programme. Of this, 34% (99 million hectares) of the certified forests are located in Europe (of which 12 million hectares is found in Russia).

According to CEPI[41], 45% of woody raw material used by the pulp mills in Europe was certified by either the FSC or PEFC forest certification schemes.

The European Environmental Agency (EEA) has stated that 'forestry practice in Europe is developing in a way that can be considered as good for biodiversity[42].' In another report, the EEA indicates that 'there are clear signs of progress in reducing threats to and enhancing the biological diversity of Europe's forests[43].'

C. CONCERNS AND MYTHS ADDRESSED

Surveys show that Europeans are concerned about the biodiversity of forests. People wrongly believe that the diversity as well as the total area of Europe's forests are in decline.

MYTH	REALITY
Forest areas are declining in Europe.	The FAO[44] estimates that in Europe, forests have actually increased by 30% since 1950. European forest area continues to grow. Including Russia, forest area has been growing by 805,000 ha per year since 1990. Excluding Russia, the figure is 607,000 ha.
Forests can be used but need to be protected.	A UN report[45] has stated that the forest health in Europe is good and improving. Under such responsible management, forests are a renewable resource that can be regenerated almost indefintely.
Biodiversity is the top priority – harvesting wood must come later.	The European Environmental Agency (EEA) has stated that 'forestry practice in Europe is developing in a way that can be considered as good for biodiversity[46].' In another report, the EEA indicates that 'there are clear signs of progress in reducing threats to and enhancing the biological diversity of Europe's forests[47].' It should be noted that sustainably managed forests are regularly 'cleaned' which helps to reduce the risk of fire in forests which can cause enormous environmental damage, loss of life and property and contribute to global warming (with reference to the devastating fires in Spain, Greece and Portugal in recent years).
Rainforests are being destroyed to produce products such as newspapers and magazines.	The world's deforestation occurs in tropical regions where people in underdeveloped countries clear forests for agricultural purposes or wood-fuel collection. It is not acceptable practice BUT it is not happening in Europe. The paper industry sources more than 80% of its wood and its wood pulp from within Europe (excluding Russia). 50% of the fibre for paper production in Europe is recovered paper. The remaining 50% comes from (i) wood residues generated by other industries (13%) - from saw dust and woodchips from saw mills and (ii) commercial thinnings (20-25%) – which are necessary to keep the forests healthy[48].
Ancient forests are being destroyed to make paper. Almost half of all industrial logged timber is pulped to make paper products. Much of it from old growth, other endangered and high-conservation forests.	For conservation reasons, over 20% of the EU forest area is considered ancient and is protected by law from harvesting. The European paper industry is committed to combating illegal logging, and will not use wood that is harvested in violation of national or local laws. In Europe, 50% of the forests are certified under a credible forest management scheme. Of the forests owned by companies in Europe, 96% are certified and the goal remains full certification[49].

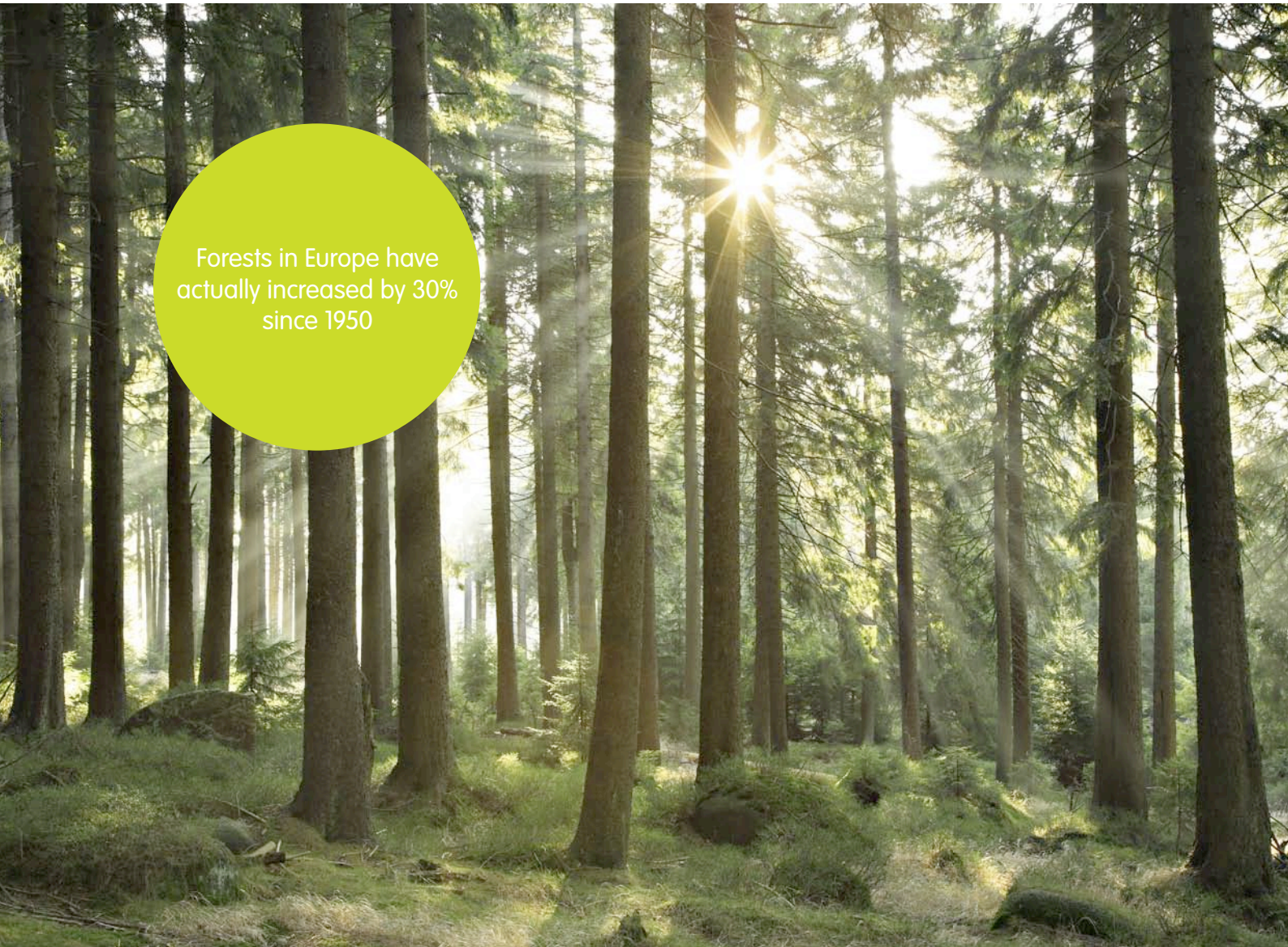
D. CASE STUDIES AND BEST PRACTICES

There are two well-known forest management programmes operating in Europe:

- The Forest Stewardship Council (FSC) operates an international framework for forest certification and wood product labelling. There are several aspects of FSC's work which have an important bearing on research to compare forest certification schemes. For example, FSC has developed and implemented comprehensive procedures to establish comparability between FSC national initiatives. FSC has also undertaken work to compare the levels of performance required by FSC standards developed at national level in different countries within similar forest regions.
- The Program for Endorsement of Forest Certification (PEFC) is implementing a system for the mutual recognition of forest certification schemes in Europe, which is now being expanded to allow inclusion of non-European schemes. PEFC has developed criteria and procedures for the assessment of national schemes.

Other forest management schemes also exist. CEPI[50] developed a matrix so that the industry and commentators can make valid comparisons between the schemes. This is now operated by an independent consultant commissioned by the International Council of Forest and Paper Associations (ICFPA). This group indicates that credible forest certification schemes should include at least four elements:

- Forest certification standards – documents, established by consensus and approved by a recognised body, which set out the forestry requirements which must be met.
- Forest certification – the procedure by which an independent third party gives written assurance of conformity to the forest certification standards.
- Accreditation of forest certification bodies – a procedure by which a body gives formal recognition that an independent third party is competent to carry out forest certification.
- A mechanism to control claims relating to forest management - including procedures to enforce a set of rules for organizations making these claims. The forest industry in Europe continues to develop best-practice programmes to meet the needs of consumers and, more generally, society.



Product

A. OVERVIEW OF THE PAPER INDUSTRY

The paper industry is made up of around 800 companies and 1,200 pulp and paper mills. Within Europe, Germany is the largest paper producer, followed by Finland, Sweden, Italy and France. The main pulp-producing countries are Finland and Sweden.

The industry has an annual turnover of 79 billion euros and provides direct employment to about 260,000 people, and indirect employment to some 1.8 million people – 63% of whome are in rural areas.

The industry is one of the biggest users and producers of renewable energy sources. Over 50% of the energy used for on-site heat and power production comes from biomass-based energy. The sector has invested heavily in combined heat and power generation.

In 2006, CEPI member countries[51] produced more than 100 million tonnes of paper and board and exported 18 million tonnes. In volume terms, graphic paper grades account for around 48% of European paper production, packaging paper grades account for 40%, and hygiene and specialty papers for 12%.

Over the last 15 years, paper & board consumption has increased by an average rate of 2.6% per annum in Europe. In 2007, more than 64% of all paper and board consumed (graphic paper and packaging material) in Europe is recycled.

B. FACTS

Trees are primarily harvested for the high-value clearwood used in other industries such as construction and furniture-making.

The raw materials used for paper making depend on the grade of paper required – as fitness-for-purpose ensures that the waste is minimised. On average however, the raw fibrous materials for paper-making are[52]:

- 50% from recovered paper.
- 50% by-product of the higher-valued industries (wood chips…)

The paper industry is a large user of energy in Europe. However, it emits significantly less CO2 that other energy intensive industries (eg steel, plastics) and is the largest producer of renewable energy (27% of the total renewable energy produced in Europe).

This is due to the large capital investments made by the industry in recent years. Of the 4.7 billion euros per annum invested in capital projects in recent years, approximately 10% (470 million euros per annum) has been specifically dedicated to direct environmental protection. The results from this investment, as highlighted in the CEPI Sustainability Report (2007), show that:

- CO2 emissions have been cut by 15% from 2003 to 2006,
- Energy consumption has been reduced by 30% in the paper industry,
- 54.5% of energy used in paper mills is derived today from renewable biomass forms.

The paper industry goes a step further by arguing that these activities have a positive effect on the environment:

- Forests are part of the cycle that helps remove CO2 from the atmosphere. This extends from trees to wood and paper products, which continue to store carbon and help reduce climate change. A point that has been reinforced by the UN.
- The fact that paper products are recyclable and renewable, means that their lifecycle can be be extended, prolonging these benefits and reducing waste. Other materials do not always share these qualities.

C. CONCERNS AND MYTHS ADDRESSED

MYTH	REALITY
Paper consumption must be reduced drastically or else we will lose our forests in Europe.	Forests in the EU cover 44% of the total land area and they have increased by 30% since 1950.
All paper should be made fromrecovered fibre.	Although the paper industry in Europe is world champion in recycling, fresh fibres are necessary to keep the recycling loop going. Cellulose fibres deteriorate with the recycling process until they become too short for further use (after approximately eight times). Besides, some high-quality paper grades can only be manufactured from virgin fibres. Nevertheless, approximately 50% of the fibre for paper and board production in Europe is recovered paper. The paper industry encourages collection of used paper as a very valuable raw material for new paper production.

Reducing paper will save trees.	Mature trees are primarily harvested for the high-value clearwood used in other industries like construction and furniture-making. On average in Europe, the main raw fibrous materials used for paper-making are[53]:
	• 50% from recovered paper.
	• 50% from the by-product of higher-valued industries:
	  • 13%[54] comes from wood chips, saw dust and the tops of the harvested trees which are generally unmarketable.
	  • 20-25%[55] comes from thinnings which is a management practice required during the lifecycle of a forest to ensure that the forest remains healthy and is safe from risk of fire.
	
	In effect, the paper industry supports forest well-being, bio-diversity and health by offering a valuable market for these by-products that might otherwise go to waste.

A heavy industry paper production has a big carbon footprint.	The paper industry is a large user of energy. However: a. Carbon sequestration in forests and the carbon fixed in recycled paper products has a significant offsetting (positive) impact, thereby lowering the carbon footprint of the paper industry. b. The industry is already the largest user of renewable energy in Europe. 54.5% of the energy used in European paper mills is renewable biomass. The emissions from this biomass are carbon neutral. The industry target is 56% by 2010.
Electronic communications are more environmentally friendly than paper. We should be careful not to criticise the IT sector too much as it does offer considerable economic and social benefits in Europe. Neverthless, we must challenge current opinions where they are not correct.	**Wrong: Electronic communications are not necessarily more environmentally friendly:** 1. A single PC emits upwards of 495 kg of CO2 annually (more than two percent of household emissions[56]). This compares to 14 kg for the mail volume of an average European household (less than 0.1% of household emissions)[57]. 2. The technical university of Stockholm (Kungliga Tekniska Högskolan) concluded that, with a "European" mix of electricity and waste management systems, the web-based newspaper with just 30 minutes reading time created 20% more CO2 emissions than the physically distributed newspaper[58].

D. CASE STUDIES AND BEST PRACTICES

The pulp and paper industry has believed for a longtime that competitiveness and sustainability should go hand in hand. The industry believes that it can achieve its critical environmental, social and economic goals. To this end, CEPI have been reporting on the industry's sustainability initiatives since 2002. The third biennial Sustainability Report was released for 2007:

- The industry aims to constantly reduce its CO2 emissions in Europe. From 2003 to 2006, it had achieved cuts of 15% which have contributed to a 10% fall in total emissions (the difference reflects growing volumes over the three-year period).
- Around 16% of the production costs on average come from energy consumption. Improving energy efficiency therefore has strong economic as well as environmental implications. The industry has been able to produce most of its own electricity on-site through combined heat and power technologies. This has led to energy savings in the production process of 30% in the last six years.
- The sector is responsible for 27% of the total production of biomass-based energy in the EU. In 2006, 54.5% of the primary energy used in pulp and paper mills in Europe came from renewable biomass forms. It aims to grow this latter percentage to 56% by 2010.

The industry has also adopted a series of innovations in recent years as it aims to minimise the use of toxic compounds involved in paper production. One of the most innovative initiatives implemented in the paper industry has been the phasing out of the highly polluting chlorine gas that was used in the paper bleaching process. The two most common pulp bleaching practices now include:

- Totally chlorine free (TCF) product to bleach without the use for chlorine or chlorine compounds.
- Elemental chlorine free (ECF) products use chlorine dioxide in place of chlorine in the bleaching process.

As a result, AOX emissions[59] have been reduced by a factor of 20 since 1991 and are now below levels of detection.

Content

A. OVERVIEW OF THE COMMUNICATIONS INDUSTRY

Magazine and Newspaper Publishing
There are over 15,000 magazine publishers located throughout Europe, many of which are Small and Medium Sized Enterprises. These companies publish more than 50,000 magazine titles in Europe and reach, on average, 80% of European adults.

300 million Europeans read magazines on a regular, consistent basis.

More than 20 billion copies of magazines are sold every year in Europe which generate annual revenues in excess of 40 billion euros. Magazine publishers employ more than 300,000 European citizens – although part of this figure includes flow-on employment in the related advertising, distribution, printing, design and paper manufacturing industries.

The newspaper industry generates a turnover of approximately 3.5 billion euros each year[60]. It sells more than 140 million newspapers everyday in Europe which are read by over 280 million people (nb: an average of two people reading each paper sold).

Direct Marketing
The European direct marketing sector represents business revenues of over 150 billion euros and employs over two million people directly, and many more indirectly, within the EU.

Direct Marketing is a commercial communications (strategic) tool which is of considerable importance to governments, fundraisers, charities as well as businesses and consumers. The Direct and Interactive Marketing Industry covers issues such as, for example, catalogues, direct mail and e-communications. It is a popular communications channel for marketers and advertisers.

The use of Direct Mail as a medium has the following benefits:

- Companies, governments, local authorities and NGOs can inform their target audience of products or services they may be interested in and hence widen the choice for Europeans. An important benefit of Direct Mail is to offer services/information that people wish to receive; the opportunity for charities to reach people in order to get support and funding, and for politicians to send their messages to their electorate;
- It enables better targeted campaigns via the main policy guidelines which are used by Direct Mail such as Preference Services and Suppression Files;
- Start-up companies or small companies with small budgets use targeted direct mail to start their marketing programmes.
- A measurable return on investment (ROI). The entire DM chain is measurable, making it, as a strategy, very beneficial to its users.

The Direct Marketing industry seeks to maximise the response rate of all its communication campaigns, as this is widely accepted to be the most environmentally sensible and cost-effective way of operating. Nevertheless, direct marketing organisations are incorporating environmental sustainability as a key element of their corporate strategies.

B. FACTS

A recent study by PostComm in the UK shows that businesses regard mail as 'core' or 'critical' to their success despite increased e-communication competition.

The importance of mail to business users features strongly in the 2008 Business Customer Survey published in October 2008 by Postcomm, the UK independent regulator of postal services.

Almost half of the survey respondents regard mail as a 'core activity' of their business, and a further 31 % say it is critical for communicating with their customers. Only 17 % report that mail is used simply for administrative purposes. This year, almost a quarter of respondents said they were using more than one provider of mail services.

The effect of electronic communication on the postal market – and ways in which the internet and mail complement each other – are clearly demonstrated in Postcomm's annual review of the postal market, the 2008 Competitive Market Review, also published on 2 October.

Tim Brown, Chief Executive, Postcomm, said:
"Our annual Business Customer Survey is a valuable guide to the way businesses regard mail services. This year's survey shows that the competitive market is spreading to include smaller mailers. Despite the increasing challenge from electronic media, 49% of the companies surveyed said mail was core to their business."

The Direct Marketing industry aims to avoid or minimise waste. It achieves this by ensuring, amongst other things, that:

a. the campaign is designed to maximise the response from recipients.
b. the database of names and addresses is accurate, clean and up-to-date, which will minimise irrelevant or undeliverable items being sent out.
c. the campaign materials have a smart design, using the minimum amount of materials, while not compromising the response rate.

To this end, under the leadership of FEDMA, the Direct Marketing industry has adopted a Recommendation on Direct Mail and the Environment, as a tool for direct marketers to reduce the environmental impact of their activities (see best practices below).

The Direct and Interactive Marketing Industry are popular communications channel for marketers and advertisers.

C. CONCERNS AND MYTHS ADDRESSED

MYTH	REALITY
More than 30% of direct mail is not opened.	The DM industry aims to maximise the response rate from its campaigns. Most European DM Associations operate a Robinson list system where the public can opt-out of receiving DM information. It should be noted however, that Europeans enjoy receiving mail that informs them of new and exciting products and services. In Belgium, 97% of people check the post daily, 74% open the mail immediately. 80% of all DM is opened – with an average reading time of two minutes. This is known as the "mail moment". In the UK, levels of opening (67%) and reading (45%) increased in 2005 (Consumer Direct Mail Trends Survey 2006). 70% of customers keep direct mail received for later use.
The Direct mail industry has no value.	In the UK, Direct mail expenditure stands at £8.6 billion (DMA Participation Media 2005). Average consumer spending is £577 through direct mail per year. This makes Direct Mail one of the most valued marketing media.
Responses from DM campaigns are low.	In the UK, 56% of consumers have purchased after receiving advertising mail – warm / targeted mailings perform best, with 38% of consumers buying from these at some point. The experience of buying products driven by advertising mail is a satisfying one for 82% of consumers.
A heavy industry paper production has a big carbon footprint.	The paper industry is a large user of energy. However: a. Carbon sequestration in forests and the carbon fixed in recycled paper products has a significant offsetting (positive) impact, thereby lowering the carbon footprint of the paper industry. b. The industry is already the largest user of renewable energy in Europe. 54.5% of the energy used in European paper mills is renewable biomass. The emissions from this biomass are carbon neutral. The industry target is 56% by 2010.
A response rate of 5% implies by default a waste of 95%.	As Direct Mail is used in the so called "media mix", its response rate is actually much higher than an average 5%, but that is not measured as such. Targeting is an important feature of Direct Mail. Advanced targeting techniques and continuous improvements help to limit excess production. However, Direct Mail is also advertising for the product or brand, therefore non-response does not constitute waste. After consumers have used the information, the material becomes a recyclable product that can be used again and again if treated properly. This is no different from an empty drinks can which is discarded correctly so that it can be reused.

Direct Mail is responsible for the size of waste landfills.	Direct Mail accounts for 1% of the total paper consumption in an average country. Across Europe, 90% of the paper used in DM campaigns is recycled. Indeed, in most communities, only a fraction of a % of landfill consists of not recycled direct marketing materials. This figure is slightly higher in local communities where there are no paper-recycling facilities available. The industry encourages consumers and local communities to recycle paper, so that it can be used again. In the UK, the paper industry estimates that direct mail (addressed and unaddressed mail, and loose inserts in newspapers and magazines) accounts for approximately 500,000 tonnes of paper per year or just 4.4% of paper usage. It is also widely reported that less than 1% ends up on landfill sites – a figure which the UK DMA is aiming to reduce further.
Junk mail and catalogues are clogging our mail boxes.	DM contains relevant and interesting information. As mentioned in the first myth, European citizens open most DM material delivered daily. Opt-out via the national preference service lists is an option for those who are truly uninterested.
Electronic DM is more effective and more environmentally friendly.	The most important aspect of any campaign is to maximize the response. UK studies have shown that campaigns combining mail and internet yield up to an additional 25% response rate.
Electronic communications are more efficient in reaching customers and achieving the objectives of the communication.	A recent study in Denmark[61] has demonstrated that despite the possibility for the Danes to receive communications by e-mail, online banking and SMS or to visit websites for information, there is still a large preference for receiving paper based communications. Replies showed that, regardless of the type of information, the letter is preferred for receiving information from businesses and public authorities. For receiving information from businesses, 62% prefer a letter. For receiving information from public authorities, 58% prefer a letter[62]. The letter is also a clear winner when it comes to receiving information from trade unions, humanitarian organisations and sports clubs. 57% prefer to be contacted by letter. In Belgium, some banks that switched from paper to electronic a few years ago are now returning to paper based communications with their customers. In addition, they are not only communicating with their customer in the traditional way – bank statements – but they are adding advertising on/in the envelope[63].

D. BEST PRACTICES

FEDMA offers a comprehensive environmental guide to all its members when developing a campaign. FEDMA's Recommendation for Direct Mail and the Environment can be found at http://www.fedma.org/environment.

Examples of the key points included in the guide, and their corresponding best practices, are:

Efficient data management

- Change of address – most postal operators have efficient change of address systems in place. It is essential that these files are used to clean marketers' databases, as well as using any returns ("nixies") to remove addresses with no change of address. For more information on national change of address databases, see the Annex of the guide.

Usage of suppression files

- La Poste: "Alliage" product: This product is aimed at identifying every returned mail of an addressed mail campaign. Within 12 days, outdated addresses are taken out of the data base. All returned mails are recycled.

Unaddressed mail

- Mediapost: Regular updating of Mediapost database including the list of addresses with 'stop pub' stickers which offers campaign cost reductions by taking it into account in the volume of material printed (4% less).
- Mediapost "Municipost" product: Possibility for local government to reach 100% of households (including those who have a "stop pub" sticker).

Environmentally friendly design and production of direct mail and promotions material

- Mediapost: Life cycle analysis of a non addressed mail campaign conducted with Carrefour alongside the publication of a guide on how to minimise at each stage the environmental impact of a campaign. Carrefour has demonstrated the success of this approach by reducing by 5% in 2 years the volume of paper consumed and by increasing to 90% the share of recycled paper in its campaign.

The Production

A. OVERVIEW OF THE PRINTING INDUSTRY

The European graphic industry employs over 870,000 people and has a turnover of more than 100 billion euros. It has a reputation for quality. It is increasingly committed to environmental and sustainable development policies and, thanks to new technologies and processes, can offer a complete range of services along the print value chain.

The printing industry has changed significantly in the last decades, and most printing plants are today highly digitized and modern.

Printed products have long enjoyed a generally positive image, due to the print industry's familiarity with consumers. In 2002 the European Commission produced a study on the image of the forest-based sectors. The printing sector had overall a positive image, where printed products were said to be important bearers of information and culture. The report also presents an almost unanimous image of a dynamic and modern industry. The industry was perceived to be very innovative, notably in the rapid development of new technologies, mostly referring to graphic design and pre-press as well as digital technologies in print.

B. FACTS

The industry is perceived by the general public to have some negative impact on the environment. This is mainly associated to using inks, colouring agents and other chemicals which can be harmful to nature as well as to the health of workers. As a result, the industry is investing heavily to limit its environmental impact:

Pre-press activities have benefited from many technological developments, which paved the way for digital image data processing. The development of modern digital technology also reduced the environmental impact of pre-press activities significantly. Direct imaging of "image carriers", such as printing plates in offset printing or printing cylinders, is now widely used in many printing processes. The best known among these technologies is CTP (Computer to plate) in offset and flexo printing.

Printing and finishing according to customer requirements, run length, and delivery time different printing processes are used.

- Offset printing (web and sheet fed) are the most common printing processes for marketing products. Web offset printing requires operators to take measures to prevent VOC waste gases emitted during the drying phase (eliminated by high-performance incinerators) while sheetfed offset is not considered to have a significant impact on air emissions. In sheet fed offset, alternative inks, often called "ecoinks" which are not based on organic solvents but on vegetable oils, are also available to printers. However, experience is still missing on how far they can substitute the traditional inks.

- Publication gravure printing is used for printing jobs with large circulations such as magazines and catalogues and it represents approximately 25% of printing activities throughout Europe. Gravure printing uses an engraved cylinder as the printing form and relatively liquid inks. The inks are kept liquid by a precise proportion of a very powerful solvent, toluene. Very efficient vapour recovery units enable a recovery rate close to 100%. Newer gravure inks with reduced toluene content are increasingly used within the industry, and toluene traces in the final copies can now be reduced to 0.04% of the total input.

- More recent developments in Digital Printing allow for the direct transfer of a digital image or text onto a substrate, such as paper, foil, carton, etc. It produces little waste in terms of paper and chemicals used. The ink or toner does not absorb into the paper, as does conventional ink, but forms a layer on the surface.

These new techniques allow every print job to be different, and thereby open the field for personalisation and customization of messages on each print. This facility contributes very positively towards increased performance in commercial communications and thus to reducing environmental impacts wherever possible.

Waste management

Waste water: The digitalization of many pre-press operations – regardless of the printing method used – fundamentally transform operations, and reduced drastically waste water impact.

- Waste materials: The ink manufacturing industry is implementing the outcome of several European directives on the potential toxicity of chemical substances known as European Directives on the Labelling and Classification of Chemical Substances, and more recently European printers contributed to the successful implementation of the new European law on the use and control of chemicals (REACH) and waste management practices.

Ensuring a high level of performance and safe use of inks has been a constant concern of European printing ink manufacturers. EUPIA, their European association, established a regularly revised "exclusion list" of chemical substances, which facilitates the compliance of European companies.

Printing plants are also following strict regulations which require to treat waste materials heavily loaded with residues as "special waste" avoiding thereby disposal via landfilling.

Recycling
The European printing industry is a partner in the paper chain, both at European and national level, and contributes in developing best practices for an efficient recovery and recycling of end of life printed products. The latest state of the art in this field can be found in the 2006-2010 European Declaration on Paper Recycling. For more information go to: www.paperrecovery.org.

Climate change
The industry (via Intergraf) has formed a task force on CO2 emissions, to investigate possible guidelines for companies to identify and reduce their impact on climate change. Effectively reducing emissions and saving energy has become a priority amongst printing companies today. The task force is currently looking into different models of calculation in order to find one suitable for the whole industry.

C. CONCERNS AND MYTHS ADDRESSED

MYTH	REALITY
Vegetable inks should always be used in printing to reduce environmental impacts.	Vegetable inks are not an option for all printing processes, but only in sheet fed offset printing. This limitation excludes automatically large run printing jobs as well as very short runs.
Printers want to print large runs to sell more to their clients.	The main objective for printers is the satisfaction of customers and the possibility to build a strong long-term commercial relationship with their customers. They are therefore committed to fulfilling the needs and wishes of customers. Printers have the adequate equipment to deal with small and large runs. Printers are also key partners in the personalisation and customisation of printed products and variable runs.
Digital printing is better for the environment than traditional methods such as offset and heat set.	Each printing process has its specific environmental impact with adequate solutions. Ozone exposure levels in the work environment is the impact commonly connected with digital printing. They remain however within international health standards. VOC emissions, de-inking of toner as well as end of life treatment of empty cartridges and other consumables also need to be taken into consideration. Printing shorter runs with digital technology, although lowering paper consumption is therefore not always the most sustainable option.
Printing is energy intensive and is therefore contributing to climate change.	As for all human activities, printing has an impact on climate change. However, within the print chain, the share of CO2 emissions from printing amounts to only 10-20% of the entire finished product. Printers work in cooperation with suppliers in order to reduce CO2 emissions along the entire value chain.
Using e-mail and internet is more environmentally friendly than print.	The use of e-mails and internet involves specific environmental impacts. These range from waste consumables (toner cartridges etc) up to waste handling of computers and servers, etc… Furthermore, increased traffic on servers and PCs also has a considerable impact on energy consumption. See the previous chapter.

D. CASE STUDIES AND BEST PRACTICES

Inks: Vegetable based inks use corn, walnut, coconut, linseed, canola and soy-bean oils which are all renewable resources (unlike petroleum). Vegetable based inks frequently have a lower percentage of VOC's[64], which contribute to air and water pollution. Compared to petroleum inks, less vegetable ink is needed for a given print job.

Regarding the traditional inks, the ink manufacturing industry adopted a self regulation known as "CEPE Exclusion List", which ensures that the inks do not contain heavy metals such as mercury, lead or cadmium, which are most often used in brightly coloured inks.

Efforts are also carried out in reducing the impact of **dampening solutions** in offset printing, via reducing or even eliminating isopropanol.

Cleaning agents also benefit from the development of better targeted products, reducing the volatility of solvents and thereby VOC emissions.

Reducing the use of paper and energy
Printers display many efforts in improving the preparation procedure of presses and thereby reduce the amount of proof copies.

Similarly printers devote a lot of attention to improved energy management strategies, which is beneficial for the environment and for production costs in the plant.

Industry projects
Printing industry federations around Europe are continuously making efforts to help printers in their environmental work. Below are some examples of projects:

- **Substitution of chemicals in the graphic industry – Denmark**
  The Danish industry federation (GA)'s intention is to create the basis for an improvement of the environmental presentation of the total Danish graphic industry by preparing the business for the substitution of problematic substances, most of all trying to be abreast of the REACH related substitution demands.

- **Health and Safety Internet – United Kingdom**
  The British Printing Industry Federation provides online support for their members to improve their performance in Health & Safety. The tools include an "H&S Health check and Induction" as well as guidance on new and upcoming topics.

- **Prevention of waste paper – Belgium**
  The Belgian printers' federation, Febelgra, has developed a guide that identifies the causes for waste paper during the procedure of print production. The guide also contains many suggestions on how to reduce waste paper that occurs during the process. With this guidance, companies managed to reduce their waste paper by up to 50%.

- **Print CO2 Geprüft – Germany**
  The German Printers' Federation, BVDM has created a model for companies to calculate and offset their CO2 emissions. The tool will be available to members of the federation, and the results are presented in a certificate.

Energy efficiency is the objective of several national or European projects including identifying areas for improvement and offering benchmarking opportunities for printers.

The Carrier

A. OVERVIEW OF THE BOXES AND ENVELOPES CONVERTING SECTOR

The paper and board converting industry generates revenues of 60 billion euros per annum and employs about 380,000 people in the EU (CITPA[65]). The main products produced by the sector are paper and board packaging (including corrugated boxes, folding boxes, beverage cartons and paper sacks), sanitary and other household paper products, office stationary, envelopes, wallpaper, bookbinding, specialty papers and many other paper and board products essential for daily life.

The industry provides a safe and secure basis to transport goods from the manufacturer to the final consumer. In effect, the business ensures that the product is received in a form that is still 'fit-for-purpose'. In the absence of the packaging and envelope sector, consumers have a significantly higher risk of product damage and/or privacy breaches.

Similarly to the paper and printing industry, the converting sector is also a strong supporter of recycling initiatives in Europe. Indeed they are a signatory to the European Declaration on Paper Recycling which commits to supporting activities that will help to hit a 66% recycling target by 2010 (across all paper grades).

B. FACTS

The converting industry is always looking to meet demands on environmental performance. By building on a solid scientific basis through lifecycle analysis, the industry is continuously working to improve its environmental performance, for instance on energy use, resource use, eco-design and recycling.

Paper and board packaging remains the EU champion for recycling:

- 92% of its fibres are from recovered paper,
- The industry currently recycles over 84% of its case material (corrugated box) packaging. This easily exceeds the target set in Directive 94/62/EC on packaging and packaging waste (set at 60% by 2008).

The European Commission confirms that the volume of paper and board packaging recycled is more than half of all the packaging materials recycled in the EU. Thus the industry has been an essential contributor to the Packaging and Packaging Waste Directive targets[66].

C. CASE STUDIES AND BEST PRACTICES

Envelopes: The Totally Recyclable Envelope
A study was conducted by the Envelution Forum to develop guidelines for envelope manufacturers in Europe to produce a recyclable envelope. The study was conducted by the Centre Technique du Papier (CTP[67]) following standard testing procedures. The studies and plant trial were able to conclusively show that:

- There was no macro or microstickie formation from the glues used in the trial.
- The window film could be completely removed. The drum screening removed the large fragments while the secondary screening removed all other fragments.
- There was no significant modification of the processed water characteristics.
- The optical characteristics of the pulp were not negatively affected in the envelope mix. This result is consistent whether using the brightness values (as shown) or the ERIC[68] values.

The study found that it was possible to recycle envelopes manufactured from standard commercial components within the graphic paper recycling stream without any negative impact on the final recycling product. What is considered as unwanted material in the recycled graphic paper stream today can actually be a valuable source of quality cellulose fibre for recycling mills tomorrow. More information is available by contacting FEPE AISBL at www.fepe.org.

Envelopes: Paper by Nature Ecolabel
The European envelope industry recognises that converted paper products have an impact on the environment during their life – from the forest management to the chemicals used for printing and the water and air emissions that occur during the converting process. Accordingly, they have been

involved in a project to develop a new European ecolabel for converted paper products. The ecolabel was launched in mid-2008. The objective of the Paper by Nature ('PBN') Ecolabel is to offer the first clear and trustworthy reference for European consumers of converted paper products[69].

The programme and specific criteria have been developedin consultation with a leading environmental NGO.
The PBN Ecolabel applies to converted paper products such as envelopes, books and pads and filing products. It takes into account the potential environmental impacts of the product:

- Raw materials: it covers responsible forest management and paper manufacturing.
- Converting process: it covers all environmental impacts potentially generated by the paper converting process: energy, emissions to water and air and the use of substances harmful for the environment during the process.

The certification is regularly reviewed and monitored. Every three years, there is a general review covering the entire set of criteria.

For more information, please refer to the website: www.paperbynature.com.

The delivery

A. OVERVIEW OF THE POSTAL INDUSTRY

The European postal sector generates revenues of 47 billion euros and employs more than two million people directly. Most incumbent operators are the largest employers in their country. The main activities are mail transportation and delivery.

The industry remains one of the key infrastructural services to support the flow of information across Europe. UPU (Universal Postal Union) figures confirm that the penetration of the mail network across Europe is almost 100%. In other words, mail operators are capable of providing communications to 100% of European citizens.

The essential nature of the service network has, once again, been recognised during the recently concluded review of the European postal policy. While the European directive was finally ratified by the European Parliament in early 2008, it ensures that a basic universal service provision remains an important pillar in the industry – guaranteeing a five-day a week delivery at an acceptable service level at an affordable price. Effectively, the European Institutions acknowledged the strategically important role of written communication in order to keep citizens informed.

B. FACTS

The European postal industry offers an extremely valuable service to all citizens. Studies reinforce the fact that post remains highly valued by recipients.

- UK Postcomm[70] study of mail vs. e-mail (in 2008) revealed that consumers considered mail as a more personal form of communication compared to email, and which left them feeling a more valued customer. They also viewed the company as more professional. Finally, they were more likely to react to the mail received.
- Studies from countries where the e-communications have high penetration levels (i.e. Sweden and Denmark) have revealed similar results.
- In Belgium, the mail moment studies provide these same insights (for more details, see page 22 on the creative message).

European Public Postal Operators within PostEurop (i.e. 48 members from the EU & CEEC's) emit between 8 and 11 millions tons of CO2 annually. Of this between 5 and 8 millions tons of CO2 can be attributed to the 25 EU operators[71]. Accordingly, the reduction of CO2 emissions is the most important environmental challenge for European public postal operators:

- Approximately 50 % of these CO2 emissions result from the use of road transport, with aviation and building energy usage being significant contributors.
- Information from postal operators suggests that it costs between 25-35g of CO2 to deliver a mailpiece (from sender to receiver).

The industry continuously strives to optimise its domestic and cross border networks. Optimising networks allows operators to improve efficiency significantly, for example by reducing specific mileages in mail delivery and by improving the use of air fleet by adding more tonnes of air freight without adding flights.

C. CONCERNS AND MYTHS ADDRESSED

MYTH	REALITY
Mail is a large polluter in the mix of household waste in Europe.	Mail represents 0.1% of total household CO2 emissions in Europe. The 14 kg of CO2 emitted yearly is the equivalent of : • One 70 km car journey • Five Cheeseburgers • Nine litres of milk • 6.6 min transatlantic flight
All companies should convert to electronic communication. It is better for the environment and also what both customers and companies want. **The big myth: Computers and the internet – they are useful for us all.**	A single PC emits upwards of 495 kg of CO2 annually - more than two percent of household emissions . **BUT they are not necessarily better for the environment!!**
People do not want paper advertisement / junk mail.	Studies in Belgium have shown that sales results at Carrefour can be up to 50% lower if door-to-door advertisement is not delivered or not delivered on time. People want paper-based advertising and they make use of it when they receive it. 52% of households say they purchase products and services seen in advertising mail they receive . All mail is highly relevant to a very large audience by providing targeted intelligent communications that enhance customer relationships and create value for all parties involved.

D. CASE STUDIES AND BEST PRACTICES

PostEurop GHG program[78]
The main goals of PostEurop's environmental program are to:
- Reduce CO2 emissions by 10% across all programme participants by 2012.
- Combat the causes of climate change – our top environmental priority.
- Minimize our use of natural resources such as fossil fuels and wood-based products.
- Increase our use of alternative fuels (e.g. biogas).
- Promote our innovative transportation methods and alternative vehicles.
- Optimize our network using state-of-the-art IT tools to avoid unnecessary trips.

In April 2008, 16 operators had committed to the programme: Österreichische Post (Austria), CTT-Correios (Portugal), Deutsche Post World Net (Germany), De Post / La Poste (Belgium), Hellenic Post – ELTA (Greece), Itella (Finland), Groupe La Poste (France), Magyar Posta (Hungary), MaltaPost p.l.c (Malta), Post Danmark (Denmark), Poste Italiane, (Italy), Posten AB (Sweden), Posten Norge (Norway), Royal Mail Group Ltd (United Kingdom), Swiss Post (Swiss), TNT (Netherlands).

"Waste not" policy at Royal Mail
Royal Mail Group (RM) is minimising the amount of waste created. Royal Mail's six environmental targets are:
- Target one: A reduction in normalised Group wide fleet fossil fuel usage by 14% from current levels by 2010;
- Target two: A reduction in normalised energy consumption for building energy use by 10% from current levels by 2010;

- Target three: An increase in the usage of renewable energy to 50% of total building energy use by 2010;
- Target four: A reduction in the normalised quantity of containerised solid waste sent to landfill by 25% from current levels by 2010; and
- Target five: A reduction in normalised water use by 5% from current levels by 2010.

Royal Mail's most significant environmental impact relates to its extensive vehicle fleet, for which total emissions amounted to 425,707 tonnes of CO2 in the last financial year. Over the last 12 months, the review of its multi modal transport operations has resulted in a much smaller environmental footprint for the medium to long distance operations. Daily CO2 emissions from the trucking operations have been reduced by 19% as a result of a much restructured network with less road miles, more use of air and no rail.

In common with other businesses RM's activities create waste which has to be responsibly disposed of in line with duty of care obligations. The waste ranges from hazardous waste such as vehicle oil and brake fluid from vehicle services workshops, through to pallets, catering waste and general office waste. They are compliant with evolving legislation relating to waste and are improving waste handling over and above the legal requirements. RM is also reviewing the possibility of developing recycling 'centres of excellence'.

RM is working with a waste contractor to develop more effective waste management and minimisation programmes. They are expanding their recycling capability and have invited specialists to give input on waste segregation and recycling.
RM discharges its electrical waste legal obligation under the Waste Electrical and Electronic Equipment directive through membership of the Valpack compliance scheme.

Norway Post goes green
Norway Post has announced a new brand strategy by choosing green as the main colour for its Nordic postal and logistics operations. The new brand and symbol of Norway Post's Nordic operations will be launched later in 2008. In Norway, the company will keep its well-known red colour.

The new strategy of Norway Post aims to make visible its range of Norwegian and Nordic products and services and to equip the group to face the major changes in the market. By choosing the colour green, Norway Post is building further on the successful position and good visibility that its express subsidiary Box has achieved in the Nordic region.

Swiss Post Goes for Another 10% Reduction
Swiss Post has invested CHF 135 million in the past ten years in more than 100 environmental protection initiatives, most of which, it says, have produced positive financial results.

Between 2000 and 2005, the postal operator reduced its CO2 emissions by 9%; it has pledged a further 10 % reduction within the next five years under the PostEurop climate protection programme.

Swiss Post sees sustainable management as an opportunity to preserve resources, reduce costs and create an energy and CO2 efficient business. It has thirty natural gas-powered vehicles in service, powered mostly by CO2-neutral Kompogas which emits 60 to 95 % fewer pollutants than petrol or diesel vehicles. There are plans to expand the natural gas fleet as better vehicles come on to the market and the fuelling station network grows.

Optimum use of rail transport within time and financial constraints enabled a 1% reduction in the climate impact of goods transport between 2000 and 2005.

Currently, rail accounts for 58 % of transport. In the PostBus passenger fleet, Swiss Post is buying vehicles with the latest emission technology and is fitting them with soot particle filters. All Postbuses meet the Enhanced Environmentally Friendly Vehicle standard, which exceeds the international euros O,5 standard for diesel engines. Swiss Post has analysed its employees' commuting routes and has encouraged them to use the more environmentally friendly public transport by offering a 20% discount on commuter passes.

In its buildings, since the beginning of 2008, Swiss Post has drawn 100% of its electricity from renewable sources. Between 2000 and 2005, the postal operator increased its use of energy from renewable sources; it reduced electricity consumption by 10%.

Swiss Post measures the effect of all its activities on the environment by converting them into a CO2 equivalent. Overall, between 2000 and 2005, it reduced its environmental impact by 15% and cut its CO2 emissions by 9%.

Correos Spain Tests Electric Bicycles and Vans
Correos is using electric bicycles and mail delivery vans in pilot projects in historical city centres and urban pedestrian areas. It has purchased nine bicycles and five vans, which, although more expensive than conventional vehicles, are said to be more economical in terms of use, maintenance and durability.

De Post/La Poste Belgium Sets Reduction Targets
In 2007, De Post/La Poste has undertaken to reduce its energy consumption by 7.5 % and its CO2 emissions by an average of 10% by 2012. In 2008 these targets were increased to 30-35% for the same period.

The postal operator is five years into a programme to replace its fleet with less polluting vehicles. At the end of 2006, it put fifty electric mopeds into service. During 2007, De Post/La Poste conducted a systematic analysis of its energy consumption at all sites. It is employing new technology where feasible. For example, it applied solar film to the façade of its headquarters in Brussels rather than install an energy-hungry cooling system.

Waste management is based on separating paper and cardboard and dangerous waste such as neon strip lights, printer cartridges, photocopier toner and spent batteries.

Plastic and PVC bags used for international mail transport are recycled. Water pressure reducers at nearly 100 sites have reduced water consumption and when buildings are renovated, De Post/La Poste installs low flow equipment such as dual flush toilets.

DHL Sweden switches to alternative Fuels
DHL Sweden has announced it will invest about euros 800,000 in the next three years in 250 vehicles that run on alternative fuels.

It plans to replace diesel vehicles with the more environmentally friendly vehicles as leases expire. In addition, the company will cover the cost of a further fifty vehicles operated by any forwarders contracted to DHL who make the switch.
DHL Sweden currently has about twenty biogas-powered vehicles, including five heavy trucks and fifteen delivery vans. It intends to convert all its diesel-powered vans to alternative fuels.

Magyar Posta Sees Solution in Solar Power
Magyar Posta aims to increase the parts of its energy use that comes from renewable sources including solar power. At the National Logistic Centre, the postal operator is installing a solar water heating system to provide 6,000 litres of hot water a day.

The ECOpost concept is for buildings designed and built for lower energy consumption.

Poste Italiane Supports EU Energy Reduction
Environmental measures are a key element of Poste Italiane's programme for Corporate Social Responsibility.

The company intends to achieve the 20% reduction in energy consumption by 2020 called for in European Union objectives. In conjunction with this, it plans to use energy from renewable sources, and for example, has already converted its heating boilers from oil to methane.

Poste Italiane operates 27,500 motorcycles and 15,000 vehicles. In 2005, it began replacing its fleet with vehicles meeting the most up-to-date pollution standards. In 2006, it increased by 53 % to 800 the number of natural gas-fuelled vehicles and in 2007, it increased the number further to 1,500.

Trials on vehicles powered by alternative fuels have included electric vehicles equipped with gel-lead batteries that could eventually replace endothermic motorcycles; electric and hybrid quadricycles and assisted push thrust bicycles.

Tests carried out in Milan last year involved a hybrid light truck with an electric engine for traction and an endothermic engine working as a generator to charge the battery.

In addition to activities meant to reduce energy consumption and CO2 emissions, Poste Italiane has a waste separation and recycling system.

TNT's Planet Me:
Tackling our environmental impact
In 2007, TNT was responsible for producing 1,019k tonnes of CO2, a total that rises to about 2,500k tonnes if you include subcontractors (excluding major acquisitions).

With the current level of technology and reach, there are no feasible alternatives in the short term to eliminate emissions entirely from operations. TNT's response is a new programme, initiated last year entitled 'Planet Me.' Its vision: to become a zero-emissions transport company.

In 2007 TNT launched Planet Me buildings concept in the Netherlands. The concept consists of a new CO2- positive Group Head Office by 2010 and will contain a total of 70,000 square meters of CO2-neutral or -positive offices at increasingly accessible locations closer to our employees' homes. This flexible office concept will not only impact their footprint and the commuting footprint of employees, it will also allow significant savings on office expenses. TNT is looking into the possibilities of developing CO2-neutral depots. As of 2008 all operations in the Netherlands are using 100% CO2 free electricity produced by hydropower.

TNT aims to cut down on CO2 emissions resulting from business travel by air and limit it to critical travel only, and this by using videoconferencing. The objective is to reduce air travel by 20% in 2008. At the end of 2007, they had state-of-the-art video conferencing equipment in over 54 locations worldwide.

TNT have introduced a cash incentive for employees who choose a highly fuel-efficient car, i.e. cars that produce less than 120g/ CO2 per kilometre.

TNT trucks and vans generate some 23 % of the company's total emissions. From now on, TNT will buy only vehicles that meet the highest environmental standards. They have already incorporated electric trucks in their operational fleet in the UK and the Netherlands. They are also running a number of projects for the use of alternate fuels.

TNT is implementing new, sustainable policies and procedures that will apply to the purchase of all goods and services and the manner in which they select suppliers and subcontractors.
TNT will provide customers with accurate information on the CO2 emissions generated by our customers' shipments. They will also offer clients the opportunity to offset the CO2 emissions of their shipments or mailings. If clients are prepared to pay for compensation, TNT will invest the same amount of money to create a carbon-positive consignment. The funds collected will be invested in dedicated climate change pro37 grammes. The first efforts in offering business partners the chance to send CO2-neutral consignments, was introduced in 2008.

DPWN: GoGreen
Deutsche Post World Net has set itself the goal of achieving a 30 percent improvement in the Group's carbon efficiency by 2020. In other words, the Group plans to raise the carbon efficiency of every letter sent, tonne transported or square meter used in terminals, branches and offices by 30 percent (compared to the base year 2007).

The objectives include the carbon emissions which the group can control directly, i.e. emissions caused by the transport of goods or by fuel consumption and the services provided by Deutsche Post World Net subcontractors.

As an intermediate step, Deutsche Post World Net has set itself the goal of raising its own carbon efficiency (excl subcontractors) by ten percent for the year 2012.

The existing climate protection goal, which – in keeping with the Kyoto Protocol – aimed to lower the carbon emissions of the European ground fleet by five percent in comparison with 1990, is fully integrated in GoGreen.

Waste Management and Recycling

A. OVERVIEW

The waste management and recycling sector has an estimated turnover of over 100 billion euros per year in Europe. It is labour intensive and provides between 1.2 and 1.5 million jobs. The industry supplies increasing amounts of the recovered products used as raw material in the European manufacturing industry. With 50% of its raw materials for production coming from recovered products, the paper and steel industries are the acknowledged market leaders in Europe followed by glass (43%) and then other non-ferrous metals (40%)[79]. In absolute terms, paper accounts for two-thirds of all the packaging material recovered for recycling – more than glass, metal, and plastic combined.

The paper industry and its print media stakeholders[80] play an active role in supporting waste management and recycling objectives. The European Declaration on Paper Recycling has a recycling target of 66% of paper consumed by 2010[81]. Based on the CEPI data, this means that Europe will recycle 64 million tonnes of paper by 2010 (an increase of about four million tonnes on 2007 levels which is already eight million tonnes more than in 2004 when the original targets were agreed). The initiative was originally set up as part of the industry's corporate social responsibility. However, some additional and tangible benefits have also been recognised as a result of the programme[82]:

- Pulping of recovered paper is less energy intensive: for example 0.4MWEh/tonne in recycling compared to 2-2.5MWEh/tonne in virgin production.
- Not land-filling the paper directly contributes to the climate as well, saving on Methane emissions from landfills.
- Promote our innovative transportation methods and alternative vehicles.
- The 2010 target will save some additional five million tonnes of CO2 compared to a scenario of "stagnation of recycling volumes".

B. TRENDS IN EUROPE

The European Union holds about 30% of world market share of eco-industries and 50% of the waste and recycling industries[83].

In total, the EU generates 1.3 billion tonnes of waste annually (equivalent to 530kg/year per person (EU-15 and 300-350 kg in the remaining EU-10). Municipal waste increased by 19% between 1995 and 2003 and remains the single fastest growing waste stream in Europe. Critically, waste generation outpaced GDP growth between 1990 and 1995 in the EU-25 (10% against 6.5%)[84].

The private contractors' combined share of the MSW (Municipal Solid Waste) market varies across Europe. The public sector remains dominant in waste collection in most countries, but in many countries treatment is already largely privatised. Commentators expect radical changes in industry investment - from both outside (via private equity) and inside (via industry consolidation)[85].

Conclusions: Supporting the Value Chain

How can the various industries of the paper based communications value chain communicate the positive value proposition that the postal industry offers to European citizens. What can we do:

A. REINFORCE THE POSITIVE ASPECTS

Our industry provides an essential service to the citizens of Europe that is accessible to all businesses and consumers.

- **The UPU estimates that the penetration of post in Europe is almost 100%.** This is not surprising since it is the only service where there is a legal requirement for all citizens to have access to it. This was even reinforced in 2008 when the European Parliament agreed to keep the Universal Service Obligation. The focus on the need to guard this network – almost like a European asset – clearly highlights the value and respect that the post holds amongst Europe's principal decision-makers.

- Furthermore, studies across Europe show that paper mail is highly-valued by the vast majority of European citizens. In the UK[86], studies have shown that mail is viewed as very professional with customers likely to feel more valued and likely also to react if they receive a letter. Studies from countries where the e-communications have high penetration levels (i.e. Sweden and Denmark) have revealed similar results. In Belgium, the mail moment studies show similar results.

- **Paper is key for the mail industry and it is an ecologically friendly product:**
  - Forestry resources are growing in Europe (incl Russia) at a rate of 805,000 hectares per year. Excluding Russia, this amounts to 607,000 hectares per year or 1.5 million football pitches.
  - The sector has developed and works with a number of forest management programmes that support sustainable forest management practices. These include FSC and PEFC.
  - Most of the raw materials used to make paper are residue from other industrial activities. The remainder are wood chips of offcuts from necessary forestry management practices. By providing a serious marketing option for these otherwise potential waste products, the paper industry is actually supporting the financial viability of the sector – and the sustainability of forests.

- **Mail constitutes a very small % of the total volume of waste.**
  - 90% of the paper used in DM campaigns is recycled.
  - DM accounts for 1% of an average country's total paper consumption.
  - Less than 1% ends up on landfill sites[87].

- The **Direct Mailing industry aims to maximise the response rate** – as this, it confirms, is the best way to minimise the environmental impact of the product.

- The **Case Materials sector** (ie corrugated boxing)has possibly the best record of any industry in the field of recycling with 92% of its fibres being recovered paper and 84% of all its products on the market being recycled. This fact is acknowledged by the European Commission.

- The **Envelope industry** confirms that, based on studies, the entire envelope, including the window film, can be recycled within the normal graphic paper recycling process.

When defending the industries mentioned in this paper one should keep in mind that recent evidence[88] underlines that the decline of mail volumes due to electronic alternatives, often referred to as e-substitution, needs to be considered carefully.

Households with internet access are likely to send and receive more mail than those without. In addition to the arguments presented in this document, which have focussed exclusively on the environmental aspect, these findings are important evidence that the traditional post and the internet can actually go hand-in-hand to create more volumes and thus value of mail.

Hybrid mail combines electronic and physical messages. Unencrypted electronic files can be printed for delivery by the postal company so that mailers save a few euros or dollars while they enjoy the advantages of paper communications. In addition, the service is promoted as reducing carbon

footprints. Altogether, this cost-efficient desktop postal service has great potential to become a valuable growth market[89].

B. WORKING ON THE NEGATIVE ASPECTS

There is no questioning the fact that our industry impacts the environment. However, we have invested millions of euros into new systems, processes and technologies to reduce this impact. This document is full of great examples of recycling and waste reduction initiatives undertaken by the paper-mail value chain. Below are some of the strongest examples:

The collective **postal industry** (via PostEurop) is developing a GHG programme that aims at:

- 10% reduction of CO2 emissions within the next five years
- combatting the causes of climate change
- minimising use of natural resources
- increasing its use of alternative fuels

The **paper industry** has reduced its CO2 emissions by 15% from 2003 through to 2006 while at the same time increasing its use of renewable energy. 54.5% of the energy required to produce paper is now coming from biomass sources.

To improve transparency, the paper industry has developed a carbon footprint framework that its members can use to measure their environmental impact and work on new ways to make further cuts.

The **European Direct Marketing Association** (FEDMA) acknowledges that the most environmentally friendly campaigns are those that maximise the response rate from the intended recipients. Accordingly, they advise that when developing a direct marketing campaign companies need to first focus on response rates and then look at how to reduce the environmental footprint of the activity – most easily by reviewing their databases to avoid sending materials to those who are no longer there, or for whom the subject is no longer relevant.

Throughout the process, the printing industry has implemented a number of measures to reduce their environmental impact and footprint. These include:

- Digital (computer-to-plate) technology in pre-press activities has reduced waste materials and waste water.
- Measures are being taken in all printing processes to reduce VOCs in their waste gases in the most adequate way in relation with each printing process.
- Printers multiply their efforts to reduce waste materials and energy consumption. This includes for instance projects aiming at reducing waste paper in the preparation phase of printing.
- To encourage further development, the industry has formed a task force on CO2 emissions, to investigate guidelines for companies to identify and reduce their impact on climate change.

The stationary and **envelope manufacturers** have recently launched a pan-European ecolabel initiative that takes the potential environmental impacts of the product into account. These include the raw materials (including paper, printing inks, glue and window films) and the converting process (including energy, emissions to water and air).

C. CHALLENGE AND CORRECT THE MYTHS

REMEMBER THE TEN KEY FINDINGS FOR PAPER BASED COMMUNICATIONS

1. **Forests are not being destroyed to produce papermail.** On the contrary, the total forest area in Europe is now 30% larger than in 1950 - and growing. Including Russia, European forests cover 44% of the total land area and they are increasing by 805,000 ha per year. Excluding Russia, the figures are 38% of land area and increasing at 607,000 ha per year (1.5 million football pitches).

2. **The paper industry rarely cuts trees for the production of paper**[90]. Trees are harvested for the high-value clearwood used in other industries such as construction and furniture-making. The raw fibrous materials used for paper-making in Europe, on average include[91]:

   - 50% of fibre from recovered paper.
   - 50% new or virgin fibre, most of which is a byproduct which may be potentially wasted:

- 13% comes from wood chips, saw dust and the tops of the harvested trees which are generally unmarketable.
- 20-25%92 comes from thinnings which is a management practice required during the lifecycle of a forest to ensure that the forest remains healthy and is safe from risk of fire.

3. **The paper industry does not have a big carbon footprint.** Because of the carbon sequestration[93] in forests and the carbon fixed in paper products, the paper industry has a relatively positive (i.e. low) carbon footprint. The UN has said that the wood and paper industries could be part of the solution to mitigate climate change.

4. **The paper industry does not consume immense quantities of fossil fuels.** 54.5% of the energy used in European paper mills is green biomass, the highest percentage of all industrial sectors in the EU. The CO2 emissions from this biomass are neutral.

5. **Mail represents 0.1% of the total household CO2 emissions**[94]. It amounts to only 14 kg of CO2 per year based on an average number of mail items per household (727) per year95. This is equivalent to[96]:

   - One 70 km car journey or
   - Five Cheeseburgers or
   - Nine litres of milk or
   - 6.6 minutes of a transatlantic flight.

6. **Paper used in communications should not end up in landfill.** In 2007, more than 64% of the paper and board consumption was recycled in Europe. The industry recognises the importance of recovered material in the paper-making process and continues to work on projects to promote recycling in Europe.

7. **Paper is recycled more than any other packaging material.** Paper accounts for two-thirds of all the packaging material recovered for recycling – more than glass, metal, and plastic combined.

8. **There is no such thing as 'junk mail'.** Studies continue to reinforce the value of Direct Mail as a means of informing Europeans. After consumers have used the information, the material then becomes a recyclable product that can be used again and again if treated properly. This is no different from an empty can of coke which is discarded correctly so that it can be reused.

9. **The Postal network is guaranteed to reach 100% of registered European citizens.** The postal industry remains the only effective communication network that is guaranteed to reach 100% of Europe's citizens. This fact is enshrined in European law. The postal industry provides a strategically essential service that simply cannot be replaced.

10. **Electronic communications are not more environmentally friendly than paper based communications.** PC's account for more than two percent of annual household CO2 emissions[97]. This cost is always underestimated by commentators. A Swedish study confirmed that reading a newspaper released 20% less carbon than reading a newspaper online for 30 minutes[98].

… AND WE ARE ALL INVESTING TO MAKE FURTHER REDUCTIONS…

D. SUPPORT ALL PARTNERS IN THE VALUE CHAIN

Wherever possible, please try to support all colleagues in the value chain. If in doubt, please contact them to ensure that what you are stating is indeed correct and aligned with their views. Use the following key findings:

Your partners include:

CEPI	**www.cepi.org**
CITPA	**www.citpa-europe.org**
FEDMA	**www.fedma.org**
FEPE	**www.fepe.org**
INTERGRAF	**www.intergraf.eu**
PostEurop	**www.posteurop.org**

Consider also using the following supportive message on the bottom of your e-mails:
When you print this email, please recycle it. Paper is renewable, recyclable and the natural support of ideas. For further information, please see www.paperonline.org

A last word on the IT sector

Electronic substitution is not just a threat, it is now a real competitive threat to the future of the mail value chain. Companies are increasingly moving towards the internet and email as they look at broadening their target audience and reducing their costs. Whether both of these objectives are or will ever be actually realised is debateable and beyond the scope of the document. National governments – especially in the nordic regions – have mandated that government documents should all move towards electronic distribution and the European Commission has set up special working groups aimed at driving a European IT strategy as a way to get more citizens online.

The papermail value chain recognises the importance of the IT sector in today's business world and readily embraces technology wherever possible. Furthermore, it is widely recognised that a paper-based mailout combined with an email response option is likely to obtain a high response rate from consumers.

HOWEVER, the industry strongly disputes the blank claims made by companies and partners that the IT solution to communications is always more effective and, most importantly in the context of this document, environmentally friendly.

Pitney Bowes made three significant conclusions in a publication released in June 2008[99]. These were:

1. Trying to compare the total carbon footprint of mail versus electronic communications in this (a multichannel) environment is virtually impossible.

2. Attempts to eliminate mail and substitute electronic communications is more of a redistribution of the total carbon footprint than its elimination.

3. The carbon footprint of a mail piece is more easily understood because its components are more visible to the recipient. However, the exercise of determining the carbon footprint of the electronic pieces of a communications process need to be done to provide a complete picture of an end-toend communications or marketing process.

Nevertheless, readers should be aware of some relevant facts and concerns about the ICT sector:

- In 2006, Gartner estimated that the global ICT industry accounted for two percent of total global CO2 emissions. At its Symposium/ ITxpo in 2007, it stated that failure to reduce CO2 emissions significantly increased the risk of companies incurring additional costs, loss of competitive position and negative reaction from buyers, pressure groups, media and politicians[100].

- The number of servers installed in Western Europe (EU-15 + Switzerland) is estimated at 6.77 million units in 2006. This was 37% higher compared to 2003. More concerning was the estimate that unit numbers would increase by 110% by 2011[101].

- The energy used to power the 6.77 million server units amounted to 51.6 TWh for servers and their data centres - including storage, network components, infrastructure (cooling lighting, UPS).

- This does not cover the energy cost of running the estimated 150-200 million PC's in Europe – of which it is estimated that the efficiency of use runs at about 30%. • Europe produces 10.3 million tonnes of electronic waste a year[102]. This compares to an annual mail volume of approximately 3.4 million tones – a significant (and growing) part of which is recycled[103].

- McKinsey & Company[104] estimate that the ICT sector in Europe (including Russia) will release an additional 338.8 million tonnes of CO2 by 2020 – an increase of 59% (125.6 million tonnes) in CO2 emissions on 2007 figures.

- Recent studies that provide some 'food for thought' are:

  - The technical university of Stockholm (Kungliga Tekniska Högskolan) concluded that, with a "European" mix of electricity and waste management systems, the web-based newspaper with just 30 minutes reading time created 20% more CO2 emissions than the physically distributed newspaper[105].

- Research by an Australian company (Trinity P3) concluded that one internet 'banner' running for one week produces 7.2 tonnes of CO2 emissions – much more than a full-page advert running in five major cities. The report concluded that internet advertising must become more targeted if it intends to improve its green image.

No independent studies exist publicly on the environmental impact of mail vs electronic substitution. This is extremely unfortunate as it means that companies, media and politicians continue to take strategic decisions without complete information.

In this respect, we should all be reminded of the UK nappy debate.

After a decade of officially supporting the reusable nappy, the UK Government is likely to make a U-turn on its position. This is because a report, commissioned by the Environment Agency, recently confirmed that there are no material differences in the GHG emissions stemming from the use of a reusable nappy versus a comparable disposable nappy. It highlighted that both had an impact on the environment – it's just that they make an impact at different stages of the product lifecycle.

It is important that complete and comparative environmental lifecycle studies are undertaken BEFORE conclusions are made that can negatively affect any one industry and its reputation.


Attempts to eliminate mail and substitute electronic communications is more of a redistribution of the total carbon footprint than its elimination.
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Notes

1. Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds. This property causes the greenhouse effect. Water vapor (H2O), carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4), and ozone (O3) are the primary greenhouse gases in the Earth's atmosphere. Moreover there are a number of entirely humanmade greenhouse gases in the atmosphere, such as the halocarbons and other chlorine and bromine containing substances, dealt with under the Montreal Protocol. Beside CO2, N2O and CH4, the Kyoto Protocol deals with the greenhouse gases sulphur hexafluoride (SF6), hydro fluorocarbons (HFCs) and per fluorocarbons (PFCs).

2. An aerosol is a collection of microscopic particles, solid or liquid, suspended in a gas. In the context of air pollution, an aerosol refers to fine particulate matter, that is larger than a molecule, but small enough to remain suspended in the atmosphere for at least several hours. The term aerosol is also commonly used for a pressurized container (aerosol can) which is designed to release a fine spray of a material such as paint. It has also come to be associated, erroneously, with the gas (propellant) used to expel materials from an aerosol can.

3. The mass of air surrounding the Earth. The atmosphere consists of nitrogen (78%), oxygen (21%), and traces of other gases such as argon, helium, carbon dioxide, and ozone. The atmosphere plays an important role in the protection of life on Earth; it absorbs ultraviolet solar radiation and reduces temperature extremes between day and night.

4. FAO, ICFPA (International Council for Forest and Paper Industries), and IEA (International Energy Agency), in collaboration with UNECE and WBCSD (Seminar, Oct 2006). Find the conclusions at: www.fao.org/forestry/newsroom/en/news/108780/highlight_110246en.html.

5. PostEurope estimates based on the analysis of the Postal Users Group 'European Mail Manifesto' published in 2006 and adpated to reflect the expanded European market.

6. Ancient forests is a type of forest that has attained great age and so exhibits unique biological features.

7. UN FAO Global Forests Report 2005

8. UN ECE The conditions of forests in Europe (2004 Executive Summary)

9. EEA Progress towards halting the loss of biodiversity by 2010.

10. FAO, ICFPA (International Council for Forest and Paper Industries), and IEA (International Energy Agency), in collaboration with UNECE and WBCSD (Seminar, Oct 2006). Find the conclusions at: www.fao.org/forestry/newsroom/en/news/108780/highlight_110246en.html.

11. In Finland and Portugal (and perhaps Austria), some trees are grown and managed to be specifically harvested for paper production. This remains only a small part of the total resource pool in Europe.

12. CEPI. For more information, see www.cepi.org

13. As wood chips or sawdust

14. Weaker or smaller trees are felled early on to allow space for the stronger trees to grow larger

15. Consumer Direct Mail Trends Survey 2006.

16. FEDMA Recommendation on the Environment 2008

17. Within this industry, the corrugated board industry has a turnover of 20 Billion euros per annum and employs 98,000 people across Europe while the envelope industry has a turnover of two billion euros and employs around 20,000 persons.

18. FEPE. See www.fepe.org ('Activities' / 'Environment') for more information

19. Ave CO2 emissions per European household is approx 20 tonnes per household per annum. This is based on figures from the International Energy Annual 2005 (7.93 tonnes of CO2 per capita x a std conversion rate of 2.80 persons per household).

20. The CO2 of mail per household is based on a European average number of mailpieces of 260 units per capita (approx average of UPU data for Europe) converted using the std factor of 2.80 persons per household (727 items per household). This is then converted to CO2 equivalents using an industry figure of 20gr of CO2 emitted per mailpiece (estimated average for Europe based on postal company CSR reports – collected & summarised by Pitney Bowes: http://66.102.9.132/search?q=cache:OIIQ_-lq73oJ:www.insight2foresight.co.uk/_attachments/3335871/Making%2520Mail%2520Relevant%2520v2.ppt+CO2+of+a+transatlantic+flight,+6.6+minutes&hl=en&ct=clnk&cd=1&gl=be). Note that the figures do not include production of materials which Pitney Bowes estimates to costs 0.9-1.3gr CO2 per gr of paper (Pitney Bowes - The Environmental Impact of Mail: A Baseline, June 2008). Assuming a 20gr mail piece, this would, in practice, double the CO2 emissions (to 28 kg CO2 per household). Still less than 0.2% of annual total household emissions.

21. Study of a reference PC in the UK indicates that a PC operating at full capacity for eight hours per day and 5 days per week releases 6.8kg of CO2 per week or 352 kg of CO2 per annum. Given that a household PC is also used on weekends, the emissions can be estimated to be as high as 495kg of CO2 per annum. http://www.zerocarbonfootprint.co.uk/green_computing.htm

22. www.usps.com/directmail/_pdf/04MailMoment.pdf

23. http://ec.europa.eu/environment/waste/pdf/faq.pdf

24. Includes printers, publishers and converters.

25. This includes exports paper waste for recycling. Recycling in Europe specifically totalled 57 million tonnes

26. http://www.iea.org/Textbase/work/2006/pulppaper/Mensink_Recycling.pdf

27. In Finland and Portugal (and perhaps Austria), some trees are grown and managed to be specifically harvested for paper production. This remains only a small part of the total resource pool in Europe.

28. CEPI. For more information, see www.cepi.org

29. Weaker or smaller trees are felled early on to allow space for the stronger trees to grow larger

30. The process by which carbon sinks remove CO2 from the atmosphere is known as carbon sequestration

31. Ave CO2 emissions per European household is approx 20 tonnes per household per annum. This is based on figures from the International Energy Annual 2005 (7.93 tonnes of CO2 per capita x a std conversion rate of 2.80 persons per household).

32. The CO2 of mail per household is based on a European average number of mailpieces of 260 units per capita (approx average of UPU data for Europe) converted using the std factor of 2.80 persons per household (727 items per household). This is then converted to CO2 equivalents using an European industry figure of 20grof CO2 emitted per mailpiece (estimated average for Europe based on postal company CSR reports – collected & summarised by Pitney Bowes: http://66.102.9.132/search?q=cache:OIIQ_-lq73oJ:www.insight2foresight.co.uk/_attachments/3335871/Making%2520Mail%2520Relevant%2520v2.ppt+CO2+of+a+transatlantic+flight,+6.6+minutes&hl=en&ct=clnk&cd=1&gl=be). Note that the figures do not include production of materials which Pitney Bowes estimates to costs 0.9-1.3gr CO2 per gr of paper (Pitney Bowes - The Environmental Impact of Mail: A Baseline, June 2008). Assuming a 20gr mail piece, this would, in practice, double the CO2 emissions (to 28 kg CO2 per household). However, this is still less than 0.2% of annual household emissions.

33. Pitney Bowes (Making Mail Relevant) http://66.102.9.132/search?q=cache:OIIQ_-lq73oJ:www.insight2foresight.co.uk/_attachments/3335871/Making%2520Mail%2520Relevant%2520v2.ppt+CO2+of+a+transatlantic+flight,+6.6+minutes&hl=en&ct=clnk&cd=1&gl=be).

34. Study of a reference PC in the UK indicates that a PC operating at full capacity for eight hours per day and 5 days per week releases 6.8kg of CO2 per week or 352 kg of CO2 per annum. Given that a household PC is also used on weekends, the emissions can be estimated to be as high as 495kg of CO2 per annum. http://www.zerocarbonfootprint.co.uk/green_computing.htm.

35. http://www.forest.fi/smyforest/foresteng.nsf/95f358fafb7d84d8c2256f4b003725e1/5c5a49462ac05185c22574ba001ba997. Note that the study assumed that the newspaper was only read once and by one person whereas the ENPA (www.ENPA.be) state that 140 million newspapers are distributed daily in Europe and are read by 280 million people. Further, the study does not consider the full cost of disposal of the PC and screen.

36. PostEurope estimates based on the analysis of the Postal Users Group 'European Mail Manifesto' published in 2006 and adapted to reflect the expanded European market.

37. The Food and Agriculture Organization of the United Nations (FAO) collected and assessed information from 229 countries and territories for three points in time: 1990, 2000, and 2005. This assessment sheds light on overall progress towards sustainable forest management at both global and regional level.

38. UN FAO Global Forests Report 2005

39. UN ECE The conditions of forests in Europe (2004 Executive Summary)

40. www.forestrycertification.info

41. CEPI, Dec 2006. Pulp and paper trade liberalisation and sustainability aspects.

42. EEA The European Environment: State and Outlook 2005

43. EEA Progress towards halting the loss of biodiversity by 2010.

44. UN FAO Global Forests Report 2005

45. UN ECE The conditions of forests in Europe (2004 Executive Summary)

46. EEA The European Environment: State and Outlook 2005

47. EEA Progress towards halting the loss of biodiversity by 2010

48. CEPI. For more information, see www.cepi.org.

49. Pulp and paper trade liberalisation and sustainability aspects, CEPI, Dec 2006

50. CEPI. For more information, see www.cepi.org.

51. Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, Netherlands and United Kingdom

52. CEPI. For more information, see www.cepi.org.

53. CEPI. For more information, see www.cepi.org.

54. As wood chips or sawdust

55. Weaker or smaller trees are felled early on to allow space for the stronger trees to grow larger

56. Study of a reference PC in the UK indicates that a PC operating at full capacity for eight hours per day and 5 days per week releases 6.8kg of CO2 per week or 352 kg of CO2 per annum. Given that a household PC is also used on weekends, the emissions can be estimated to be as high as 495kg of CO2 per annum. http://www.zerocarbonfootprint.co.uk/green_computing.htm

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58. http://www.forest.fi/smyforest/foresteng.nsf/95f358fafb7d84d8c2256f4b003725e1/5c5a49462ac05185c22574ba001ba997. Note that the study assumed that the newspaper was only read once and by one person whereas the ENPA (www.ENPA.be) state that 140 million newspapers are distributed daily in Europe and are read by 280 million people. Further, the study does not consider the full cost of disposal of the PC and screen.

59. Adsorbable Organic Halides (AOX): AOX is a measure of the amount of chlorinated compounds in an effluent.

60. http://ec.europa.eu/enterprise/ict/policy/publ-ind/sr01-eur-newspaper-market.pdf

61. The survey (Qualitative strengths of the letter in a digitised everyday life) by Tranberg Marketing

62. More information on http://www.postdanmark.dk/contentfull.dk?lang=en

63. FEDMA

64. volatile organic compound (VOC): Any organic compound which evaporates readily to the atmosphere.

65. Within this industry, the corrugated board industry has a turnover of 20 Billion euros per annum and employs 98,000 people across Europe while the envelope industry has a turnover of 2 Billion euros and employs around 20,000 persons.

66. www.cepi.org + www.paperonline.org

67. Centre Technique du Papier - GRENOBLE - FRANCE

68. ERIC = Effective Residual Ink Concentration

69. Labeling initiatives have already been set up to measure the environmental standards relating to paper products. Some of these certifications are country specific while others are related to manufacturers or NGOs. However, none of these are pan-European and apply to converted paper products from raw material to the end product.

70. Postcomm is the postal regulator in the United Kingdom

71. These figures are based on studies undertaken by Post Danmark and include emissions associated with transport activity, building energy usage and subcontractors for both mail and parcel services.

72. Ave CO2 emissions per European household is approx 20 tonnes per household per annum. This based on figures from the International Energy Annual 2005 (7.93 tonnes of CO2 per capita x a std conversion rate of 2.80 persons per household).

73. The CO2 of mail per household is based on a European average number of mailpieces of 260 units per capita ((approx average of UPU data for Europe) converted using the std factor of 2.80 persons per household (727 items per household). . This is then converted to CO2 equivalents using an industry figure of 20gm of CO2 emitted per mail piece (estimated average for Europe based on postal company CSR reports – collected & summarised by Pitney Bowes: http://66.102.9.132/search?q=cache:OlIQ_-lq73oJ:www.insight2foresight.co.uk/_attachments/3335871/Making%2520Mail%2520Relevant%2520v2.ppt+CO2+of+a+transatlantic+flight,+6.6+minutes&hl=en&ct=clnk&cd=1&gl=be). The figures do not include production of materials which Pitney Bowes estimates to costs 0.9-1.3gr CO2 per gr of paper (Pitney Bowes - The Environmental Impact of Mail: A Baseline, June 2008). Assuming a 20gr mail piece, this would, in practice, double the CO2 emissions (to 28 kg CO2 per household). However, this is still less than 0.2% of annual household emissions.

74. Pitney Bowes (Making Mail Relevant) http://66.102.9.132/search?q=cache:OlIQ_-lq73oJ:www.insight2foresight.co.uk/_attachments/3335871/Making%2520Mail%2520Relevant%2520v2.ppt+CO2+of+a+transatlantic+flight,+6.6+minutes&hl=en&ct=clnk&cd=1&gl=be).

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76. www.usps.com/directmail/_pdf/04MailMoment.pdf

77. Door-to-door is the delivery technique whereby a postal operator will deliver identical non addressed and not franked mail pieces to every household in a designated area.

78. http://www.sustainablepost.eu/23.html

79. http://ec.europa.eu/environment/waste/pdf/faq.pdf

80. Includes printers, publishers and converters.

81. This includes exports paper waste for recycling. Recycling in Europe specifically totalled 57 million tonnes

82. http://www.iea.org/Textbase/work/2006/pulppaper/Mensink_Recycling.pdf

83. http://ecoinno2sme.eu/indexphp5?file=24&archive=1&news=70

84. http://ec.europa.eu/environment/waste/pdf/faq.pdf

85. http://www.epsu.org/IMG/pdf/EN_PSIRU_waste_management_in_EU_Feb_06.pdf

86. Mail can win in a digital world, Pg 10, http://www.psc.gov.uk/postcomm/live/news-and-events/speeches-and-presentations/2008/international-direct-marketingfair-2008/2008_04_30_IDMF_2008_Postcomm.pdf

87. Source: UK DMA

88. Such as Cap Gemini (2007) European Postal Perspective and Pitney Bowes (February 2008), Mail Trends Update

89. IPC Market flash, October 2008

90. In Finland and Portugal (and perhaps Austria), some trees are grown and managed to be specifically harvested for paper production. This remains only a small part of the total resource pool in Europe.

91. CEPI. For more information, see www.cepi.org

92. Weaker or smaller trees are felled early on to allow space for the stronger trees to grow larger

93. The process by which carbon sinks remove CO2 from the atmosphere is known as carbon sequestration

94. Ave CO2 emissions per European household is approx 20 tonnes per household per annum. This is based on figures from the International Energy Annual 2005 (7.93 tonnes of CO2 per capita x a std conversion rate of 2.80 persons per household).

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96. Pitney Bowes (Making Mail Relevant) http://66.102.9.132/search?q=cache:OlIQ_-lq73oJ:www.insight2foresight.co.uk/_attachments/3335871/Making%2520Mail%2520Relevant%2520v2.ppt+CO2+of+a+transatlantic+flight,+6.6+minutes&hl=en&ct=clnk&cd=1&gl=be).

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98. http://www.forest.fi/smyforest/foresteng.nsf/95f358fafb7d84d8c2256f4b003725e1/5c5a49462ac05185c22574ba001ba997. Note that the study assumed that the newspaper was only read once and by one person whereas the ENPA (www.ENPA.be) state that 140 million newspapers are distributed daily in Europe and are read by 280 million people. Further, the study does not consider the full cost of disposal of the PC and screen.

99. Pitney Bowes - The Environmental Impact of Mail: A Baseline, June 2008

100. http://www.gartner.com/it/page.jsp?id=503867

101. http://www.efficient-server.eu/fileadmin/docs/reports/E-Server_PartI_Saving_potentials_and_scenarios_06112007.pdf

102. http://www.eubusiness.com/Environ/e-waste.01/

103. This is an estimated figure for the EU 15 based on the a Pitney Bowes figure for worldwide mail volume of approximately 13.5 million metric tons.

104. The McKinsey Quarterly: How IT can cut carbon emissions

105. http://www.forest.fi/smyforest/foresteng.nsf/95f358fafb7d84d8c2256f4b003725e1/5c5a49462ac05185c22574ba001ba997. Note that the study assumed that the newspaper was only read once and by one person whereas the ENPA (www.ENPA.be) state that 140 million newspapers are distributed daily in Europe and are read by 280 million people. Further, the study does not consider the full cost of disposal of the PC and screen.

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