



## Myths and Realities



Paper has been innovating for nearly two thousand years to meet mankind's ever-changing needs and today it is an integral part of our daily life: as a print medium to communicate information and knowledge, as a packaging material, for daily hygiene, or as a special material for a variety of applications, from banknotes to medical filters. Throughout the day, each and every one of us is in permanent contact with this natural, renewable and recyclable material.

As with all production activities, papermaking uses resources. Unlike other materials, however, paper is made from wood, a renewable resource, and is a prime example of successful recycling.

Volumes and volumes have been written about paper, which is quite to be expected given its omnipresence in our lives. However, despite the length of time it has been with us, we are, to a large extent, still relatively ignorant about paper.

Environmental issues related to paper are a source of numerous misconceptions and untruths, which we would like to address. Here a list of myths that will be addressed:

- The paper industry destroys forests
- Paper consumption should be reduced
- Paper production is bad for the environment
- All paper should be recycled
- Paper production uses too much energy
- The paper industry is the largest industrial user of water
- Paper production is bad for the climate
- Information technologies are preferable to paper
- The paper industry is old

## THE MYTH

“ The **paper** industry destroys **FORESTS** ”

## THE REALITY

- The paper industry **contributes to keep up forests.**
- The paper industry practices sustainable forest management.
- The paper industry is not responsible for the depletion of tropical forests.

Around 11% of the timber felled throughout the world is used to make paper \*. The paper industry depends on trees and needs thriving forests. It is very much in its interests that this raw material can be used sustainably and will remain available as a raw material to future generations.

From a tree, big logs are used for timber. The branches cut to maintain trees healthy are used for paper making. Also the residues from saw mills such as wood chips, are also raw material for paper. Over the years, thinning operations weed out the weaker trees, but there is still a net gain. The Food and Agriculture Organization (FAO) reckons that there is an annual forest growth of 5 per cent in the northern hemisphere, equivalent in Europe alone to the area of 1.5 million football pitches

Deforestation is generally occurring in the southern hemisphere and is mainly due to conversion of forests into agricultural land and for fuel wood collection \*. The European paper industry supports certification as a way of documenting sustainable forest management. Certificates based on defined criteria issued by independent auditors make this verifiable for customers and consumers. Half of Europe's forests are already certified and 82% of forests owned by paper companies are certified; the industry's commitment to responsible sourcing is clear and beyond any reasonable doubt.

In Europe, the paper industry signed up for a Legal Logging Code of Conduct firmly condemning illegal logging and related corruption and criminal activities.

\*FAO Statistics 2007

\*FAO Global Forest Resource Assessment 2005



## THE MYTH

“ Paper CONSUMPTION  
should be **reduced** ”

## THE REALITY

- Paper is an indispensable part of our civilisation.
- Paper is made from renewable raw materials.
- Recycling spares resources.

We should not waste resources or support wastage. But without paper our life today would be difficult to conceive. We read newspapers, magazines and books, we expect goods to be properly packed, and we need paper for our daily hygiene. We don't even see industrial and commercial transport packaging, or the files and documents in offices, not to mention the special papers that are used in vehicle manufacturing, for wine filtering or for medical applications, for example.

Unlike other materials, paper is made from a renewable material - wood. Sustainable forest management will ensure that forests grow and enough material is available. But also the paper

industry's motto is doing more with less: making paper with fewer materials, less energy increasingly renewable, in more efficient machines, towards zero waste, and providing thousand of needed products. . It makes both good environmental and economic sense.

Recycling plays an important role in the sustainability of the paper cycle. The reuse of processed raw materials cuts down on energy, wood fibres and waste water treatment. As much as 66% of paper in use is collected for recycling. More concretely, nine out of ten corrugated boxes are made from recycled fibre; and nine out of ten newspapers are made with recovered paper.

## THE MYTH

# “ Paper is **BAD** for the **ENVIRONMENT** ”

## THE REALITY

- Paper is one of the few sustainable products.
- The paper industry has reduced its environmental impact greatly over the last 10 years.
- Paper products store CO<sub>2</sub>.

Paper boasts exceptional environmental credentials: it's natural, biodegradable, recyclable, comes from an infinitely renewable resource and is produced in a sustainable manner.

It starts with what we learned in school: through nature's own process – the photosynthesis – trees capture and store billions of tonnes of carbon, day after day. The carbon sequestered in forests is subsequently stored in products made of wood, such as paper, and the carbon storage is further prolonged by recycling paper.

While paper production has increased steadily in the last 10 years, environmental impacts have decreased. The European Paper Industry decreased its specific emission of CO<sub>2</sub> per tonne of paper produced by 42% since 1990. And by 8%<sup>1</sup>

in absolute figures, they were the only industrial sector to reduce their emissions from 2007-2008.<sup>2</sup> Although paper making is energy intensive, 54% of the energy used in European paper mills is renewable, therefore carbon neutral.<sup>1</sup>

The European paper industry is the highest user of cogeneration, a system that produces at the same time electrical and thermal energy for industrial consumption, with high level efficiency, therefore saving primary energy and reducing emissions. 94% of its on-site electricity is produced through co-generation<sup>1</sup>.

83% of the paper mills in Europe are certified by an environmental management system.<sup>1</sup>

1. CEPI Sustainability Report  
2. Eurostats

## THE MYTH

“ We should only  
**use** and **produce**  
**RECYCLED PAPER** ”

## THE REALITY

- Europe is the world leader in paper recycling.
- To keep the recycling process going, **fresh fibers** are needed.

Paper is the most recycled material in Europe and more than half of the paper produced comes from recycling. In Europe, 66% of paper in use is collected for recycling<sup>1</sup>. Nine out of ten corrugated boxes are made from recycled fibre and nine out of ten newspapers feature on recycled paper. Year after year paper recycling rates continue to rise and when fibres can no longer be used they can be converted into renewable or green energy. Today, more than half of the raw material to produce paper in Europe is recovered paper.

Not all paper can be recycled though. Around 19% of the paper we use is not available for recycling. Sometimes, because we simply keep it, such as books, documents and photographs that we have at home or that are kept in archives or libraries. In other cases they deteriorate or disappear, such as sanitary paper or cigarette paper.

Cellulose fibre from wood, which is a natural renewable resource, is the fundamental raw material for paper making. The cellulose fibre deteriorates with every recycling process. It is estimated that it can be reused four to eight times on average. Fresh fibres are therefore required to maintain the paper cycle. Some paper grades, due to their end use, need to offer characteristics that can best be provided by virgin fibre. To produce such grades, virgin fibre and recycled fibre are incorporated in different proportions in the European paper production.

The best contribution that citizens can make to responsible paper consumption is their contribution to recycling, by separating used paper from other residues and putting them in the appropriate containers.

1. ERPC Monitoring Report 2008



## THE MYTH

“ Paper **production** uses  
too much **ENERGY** ”

## THE REALITY

- The paper industry has **considerably reduced** its energy requirement.
- **54%** of the energy used by the European paper industry is **bio-energy**.

Energy is required for all industrial production. The paper industry is no exception: it requires energy to operate its machines and to dry the paper web. About half of the energy used in the European paper industry already comes today from renewable energy sources.

Around 500 kWh of energy are required in Europe to make 200 kg of paper, which is more or less the average annual per capita consumption in the countries of the European Union.

500 kWh is equivalent to:<sup>1</sup>

- powering one computer continuously for five months;
- burning a 60Watt light bulb continuously for one year;
- The energy consumed by a typical household

leaving its electronic equipment on stand-by for a year.

Moreover, the energy required annually to create, send, receive, store, and view spam adds up to more than 33 billion kWh, approximately equivalent to the power provided by four large new coal power plants.<sup>2</sup>

For economical and environmental reasons the paper industry works continuously to optimise its processes. The sector is already the biggest single user and producer of bio-energy in Europe and it is committed to increase its share of renewable energy until 2010 to 56%.

1. paper& the environment, ATS consulting 2007

2. McAfee Carbon Footprint of Email Spam Report

## THE MYTH

“ The **paper** industry is the **largest** user of **WATER** ”

## THE REALITY

- Paper production **reuses the water** it takes in.
- The paper industry has steadily **reduced its water usage**.
- The paper industry uses **high end water purification**.

Every paper mill has a unique water profile due to its location and the origins of its water, the destination of its effluent and the origin of its fibrous and non-fibrous raw materials being used.

Nevertheless, the European paper industry is continuously working on reducing its impact on water consumption. In the 1970s producing 1 tonne of pulp required as much as 250m<sup>3</sup> of water – now it only takes 5-50m<sup>3</sup><sup>1</sup>. The past decade saw water consumption of paper machines being reduced by 1/3 as a result of more efficient water circulation.<sup>1</sup>

Water used for the paper production is mostly circulated in the system. Minerals from the wood nevertheless make it necessary to discharge some amount of water. This will be purified in high-end waste water treatment facilities.

The paper industry has become an active partner in the development of water stewardship and water footprinting and is developing comprehensive water reporting guidelines for the sector.

1. Kemira



## THE MYTH

“ Paper **production** is  
bad for the **CLIMATE** ”

## THE REALITY

- The European Council has recognized wood products as climate friendly.
- Paper is a natural, renewable and recyclable product.
- The paper industry has steadily reduced its carbon dioxide emissions.
- Sustainable forest management helps reduce worldwide carbon dioxide emissions.

The main source of raw material for paper - trees - is a vast carbon store and the prime absorber of CO<sub>2</sub> from the atmosphere. Young trees are much more efficient at absorbing carbon than old forests.

Mature trees absorb carbon slower the older they get. To maximize the carbon storage the trees can provide we need young healthy forests where trees are regularly harvested and re-grown.

But the benefit does not stop there as paper also continues to store carbon throughout its lifetime. Still, around 160 kg of CO<sub>2</sub> are emitted during the production of 200kg of paper - the average European per capita consumption - equivalent to the amount emitted by a typical family car over 1,000 km.

The current climate discussion frequently refers to the “carbon footprint” of products as a mean for expressing the emission of climate-relevant gases by a process or through the manufacture of a product. The manufacture of a piece of paper has a carbon footprint, as does the internet.

To put things in perspective:

- Users of e-mails for business purposes generate 131 kg CO<sub>2</sub> per year, of which 22% results from spam <sup>1</sup>.
- 1,000 Google queries generate 200g CO<sub>2</sub>, the same amount as a mid-size car travelling 1 km <sup>2</sup>
- The printed Stern Review caused 85g CO<sub>2</sub> in total per paper copy, while the same report read online generates 226g of CO<sub>2</sub> emissions every time it's being read and the production of a CD or DVD alone causes 300 or 350g of CO<sub>2</sub> respectively. <sup>3</sup>

For economical and environmental reasons the paper industry works continuously to optimise its processes. The European pulp and paper industry decreased their CO<sub>2</sub> emissions per tonne of paper produced by 42% since 1990, down by 8% overall. <sup>4</sup>

1. Stern review, 2 calculation based on intel dual core, CRT monitor and wireless router, energy costs sourced from choice Australia, 3 study in 2007 by Dr Tony Wilkins for News Ltd.
2. McAfee Carbon Footprint of Email Spam report
3. Google
4. CEPI sustainability report 2009



## THE MYTH

“ Information **TECHNOLOGIES** are preferable to **paper** ”

## THE REALITY

- All human activities, including information technologies, have an environmental footprint.
- Paper is an indispensable part of our civilisation.
- Paper is made from renewable raw materials.

Throughout times, paper has been all around us, working for us, delivering to us, and making our lives easier. That is why it is used in every corner of the world every day. We read newspapers, magazines and books, we expect goods to be properly packed, and we need paper for our daily hygiene.

Whilst the efficiency of electronic communication is clear it becomes increasingly visible that electronic communication and in particular the energy requirements of the increasing worldwide network of servers has a significant carbon footprint too. Electronic communication must be recognised as delivering efficiency but not necessarily more sustainability.

- Google emits 96.5 tonnes of CO<sub>2</sub> every day from Google searches alone <sup>1</sup>.
- A UN study found that the manufacturing of a computer and its screen takes at least 240kg of fossil fuels, 22kg of chemicals and 1.5 tonnes of water – more than the weight of a car. <sup>2</sup>

- It takes about 152 billion KWh per year just to power the data centers that keep the net running\* and emissions from computers will increase by 280% by 2020, equal to 1.4 gigatonnes of CO<sub>2</sub> .<sup>3</sup>

Recycling plays an important role in the sustainability of the paper cycle. The paper recycling process cuts down on energy, wood fibres and waste water treatment.

Paper is a renewable and recyclable product that, if responsibly produced and consumed, is an environmentally sustainable media and it continues to be an essential component of modern life as well as playing an important cultural and educational role. Paper has found in the web a precious partner: we use the web to receive knowledge and paper for this knowledge to be understood.

1. Energy-savingnews.com
2. UN study
3. Newscientist.com

## THE MYTH

“ The **paper** industry is  
OLD FASHIONED ”

## THE REALITY

- Paper is **innovative**.
- The paper sector is a **modern industry**.
- Paper is **constantly evolving**, as is its **production technology**.

From the interactive children's book where dogs actually bark, to paper batteries, anti-scan anti-copy technologies, even components of rockets and satellites, paper is constantly innovating to fulfill people's wishes.

As an expression of everyday life, paper has to be versatile and ready to respond to changing needs. Be it in new printing methods, intelligent packaging, scratch and sniff sensation books, or radio identification tags – paper delivers. All this is possible because of technology.

The paper sector is a modern and technologically innovative industry. The continuous evolution of the paper technology is defined in increased speed, increased productivity, increased specialisation and better production quality, always through solutions oriented to environmental protection.

Paper is made in large tailor-made machines which need highly sophisticated control equipment and process computers. A modern production line is up to 200 meters long and occupies a space equivalent to two football pitches. Paper production is totally computerised and automated; and for the management of a modern paper machine up to 50 screens are needed. Hundreds of last generation sensors and scanners handle the control processes for different parameters.

The machines contain more electronics than a Boeing 747. Thanks to that paper machines deliver products that offer ways to communicate, more choices on the supermarket shelf, more options to package our goods.