

A woman with dark hair is lying on her back on a lush green lawn, reading a newspaper. She is wearing a patterned sleeveless top. In the background, several large, mature trees with thick trunks stand against a bright, slightly blurred sky. The overall scene is peaceful and suggests a quiet moment of reading in nature.

**The story  
behind your  
paper**



# Paper - nature's champion

Few materials can compare to paper. It's simply an amazing product! Look around you; paper is used everywhere in one form or another. Even better, paper boasts exceptional environmental credentials: it's biodegradable, can be recycled, comes from an infinitely renewable resource and is produced in a sustainable manner. The future of paper products and applications is changing every day to meet new challenges and provide new solutions for society's needs.

We hear all too often about the negative aspects of paper, but can you imagine a world without toilet paper in the morning, no newspapers to read at breakfast, unfiltered coffee, no kitchen roll to wipe the table, no bank notes to pay for a bus ticket (which wouldn't exist either!), no letters or faxes in the office, no paper to print out emailed reports, no paper to write on, no envelopes or stamps, no photos of loved ones in your wallet, no paper napkins at mealtimes, no magazines to read on the train, no paper bags to carry the shopping, no boxes to protect important or fragile goods, no books to read in bed...? Without paper, the world would be very different indeed.

Not only is paper vital to our daily lives, it also yields social benefits as the industry employs more than 250,000 people in Europe, indirectly providing 1.8 million jobs in sectors such as publishing and packaging. This helps to generate wealth and creates jobs in predominantly rural areas, where it is often the only source of revenue for local populations.

Paper is so much a part of our daily lives that we take it for granted and rarely stop to think about the story behind our paper.

## Paper – the sustainable choice

A low carbon economy and resource efficiency will shape our sustainable future. The paper industry is a good example of how these aspects go hand in hand with competitiveness.

With its renewable raw materials, ecologically adapted forest management techniques, continually improving environmental processes and recyclable products, the industry has the potential to be recognised as a key player in ongoing efforts to protect our climate and environment.

Wood is *the* Kyoto material. It stores carbon over several hundred years throughout the lifecycle of wood-based products. The world's forests are the second largest stores of CO<sub>2</sub> after the oceans.

Trees use an amazing process called photosynthesis, which captures and stores billions of tonnes of carbon without any adverse environmental effects day after day.

Photosynthesis is the ultimate in green power, allowing us to respond to the challenges

of climate change with achievable and sustainable solutions.

The numbers tell their own story.

For every tonne of wood produced by a tree, 1.5 tonnes of CO<sub>2</sub> is taken out from the atmosphere.

But that's just the beginning. When something is made from a tree, the carbon sequestered in the forests and then stored in the forest products themselves largely offsets the carbon produced by the manufacturing process.

Each year, over 100 billion tonnes of atmospheric CO<sub>2</sub> is stored in wood products. Whether it's basic building lumber or the latest novel, products from sustainably managed forests are key to reducing our carbon footprint.

Everyone is concerned about disappearing forests but, at current rates of usage in Europe, trees for papermaking and other industrial uses constitute

an endless resource. More trees are growing than are being cut down and, thanks to better standards of forest management, Europe's forests are getting bigger. Annually, forests in Europe are growing by 6,450 square kilometres – equivalent to 4,363 football pitches of new forest every day – and only 60% of this annual growth will be harvested. Wood reserves are now greater than one hundred years ago, despite an enormous rise in wood use over the last fifty years.

Rapidly increasing volumes of recovered paper are being used to manufacture paper and board. This means that over 50% of Europe's papermaking fibres are now derived from recovered paper and board: a constantly renewed cycle.

# Paper – the natural resource

The paper industry uses two principal raw materials: wood and recovered paper. In Europe, each currently represents approximately 50% of production. We cannot just use recovered paper to make new paper, however, as eventually there will be no paper left, once the fibres lose their strength. To maintain quality and strength, it is essential that we introduce new or virgin fibres to deliver a quality product.

## Wood

Wood is the primary raw material for the pulp and paper industry, because it is the main source of cellulose fibre.

The paper industry uses a large variety of different soft and hard woods to produce paper, and the papermaker often mixes a range of wood pulps with different characteristics to create a particular type of paper or board.

Nowadays, 26% of the wood used for papermaking comes from wood residues generated from other industries, such as saw mills, construction and furniture making, and around 50% of the roundwood used in Europe comes from commercial thinnings, necessary to keep Europe's forests healthy.

## Recovered paper

The paper industry has recycled used paper and board for over 700 years. In recent decades, used paper has become an increasingly important raw material.

Almost any paper can be recycled or contain recovered fibres. The fibres inside paper products can be reused several times to produce new high-quality products, fit for purpose, and not necessarily the same type of product. Different paper grades have different requirements.

Ultimately, what is important is that paper products are designed for recyclability so that they can be increasingly recovered and reused in new paper products.

Eventually, having been used several times to produce paper products, the fibres become weakened and the recovered paper is used to produce renewable energy to support the papermaking process instead.

Recycling is both economically and ecologically sound and a vital part of European paper production, clearly illustrating how sustainability and competitiveness can go hand in hand.

## Paper – produced with care

Whether using wood or recovered paper, the first step is to dissolve the material into pulp. The water is then pressed out of the paper and the residue is dried. Ninety-five per cent of the water used is cleaned and reused on-site and all waste water is treated at our production sites, in accordance with European legislation and standards.

Pulp and paper production is energy intensive and related costs can represent up to 25% of total manufacturing costs. The sector has made

good progress over recent decades, decreasing its electricity requirements by 16% through innovation and investment. CO<sub>2</sub> emissions from fossil fuels have also been reduced by 29% per tonne.

Today, more than 50% of the total energy consumption of the European pulp and paper industry comes from biomass fuels, which are CO<sub>2</sub> neutral. Some 90% of all electricity and heat/steam generated at paper mills is produced together, using

the very latest combined heat and power technology (CHP). This process saves more than 30% of energy, as it produces both heat and electricity in one integrated process rather than separately, as was done in the past.

The paper industry is energy intensive, but not carbon intensive.



## Paper – touching our daily lives

Paper is an extremely useful product, playing a crucial role in our daily lives with its endless range of applications. It may be impregnated, enamelled, metallised, waterproofed, waxed, glazed, sensitised, bent, turned, folded, twisted, crumpled, cut, torn, dissolved, macerated, moulded, embossed, coloured, coated or printed. It can be marked and the mark erased. It can be laminated with itself or with fabric, plastic or metal. It can be opaque, translucent or transparent. It may be made to burn or be fire resistant. It may be used as a carrier, barrier or filter. It may be made tough enough to withstand acid or soft enough

for a baby's skin. It can be read from, laid on or even worn as a garment.

### Innovation

Paper is constantly evolving, as is its production technology. Little can happen in modern life without paper or board, and its potential seems almost limitless. New ways of using paper are being devised daily and this will continue because it is an essential component of our everyday lives. Just look around you and see how many uses of paper you can identify in your immediate surroundings!

Paper touches every aspect of our lives and is the very

foundation of the civilised world. It is used in every corner of the globe and should not be taken for granted, but valued as a precious commodity. If we are to successfully address climate change, we must understand the story behind the material and recognise that paper and its production are actively helping to mitigate climate change and deliver sustainable development.



A woman with long dark hair, wearing a light blue top, is sitting on a bed and reading a large open book. Two children, a young girl with curly red hair and a young boy with short brown hair, are sitting next to her, looking at the book with interest. The room has white walls and a white ceiling with a circular light fixture.

## Paper – what's next?

With new products and solutions constantly being developed to meet the most complex of challenges, the paper industry is also changing and evolving in terms of both manufacture and use of raw materials.

Intelligent paper used in packaging allows us to see clearly if products are past their sell-by date by changing colour, printed electronic circuits can be used instead of traditional heavy circuit boards, scratch and sniff books bring learning to life, radio identification tags allow products to be traced at every stage, and even batteries can be made from paper.

These are just some of our revolutionary developments, but the whole industry is working hard to do more with less. We aim to develop products that further reduce the carbon footprint and help us play our part in fighting climate change and protecting our environment.

But it is not just the finished products that are changing; the production processes themselves are evolving and becoming increasingly efficient and sophisticated. New technologies are in place to make paper lighter, reduce energy consumption, and generate and use biofuels.

Many paper mills are looking at integrating bio-refinery operations into their pulp and papermaking processes. This new concept will allow companies to add further value to their bio-based raw materials, wood and recovered paper, as these processes yield not only pulp, but also chemicals, energy, biomass and biofuels.

The European pulp and paper industry is changing, adapting to new market conditions, responding to consumer requirements, and moving closer to its vision of integrated sustainability and competitiveness.

# Facts & figures

## The entire European forest and paper chain:

Turnover	€ 360 billion
Value added	€ 120 billion
Employment	Over 3 million jobs
Companies	344, 000

One of the most important industry sectors in Europe = 6.5% of turnover of all manufacturing industries

## The European pulp and paper industry:

- Generates € 80 billion for the economy and adds € 18 billion in value and wealth creation.
- Invests an average of € 5 billion per year and spends more than 10% of this on environmental protection.
- Employs 259,100 people and provides 1.8 million people with indirect employment, 63% in rural areas.
- Produces 102 million tonnes of paper.
- Exports 17.7 million tonnes of paper globally, around 17.3% of its production.
- Is committed to recycling – 64.5% of the paper and board currently used in Europe is recycled.



# Find out more

This brochure was produced by the European paper and packaging industry

To find out more about the pulp and paper industry, visit:

- Pulp and paper industry: [www.cepil.org](http://www.cepil.org)
- Pulp industry: [www.epis.org](http://www.epis.org)
- Paper and board converters: [www.citpa-europe.org](http://www.citpa-europe.org)

To find out more about specific paper applications, visit:

- Speciality paper: [www.paperimpact.org](http://www.paperimpact.org)
- Kraft paper: [www.cepil-eurokraft.org](http://www.cepil-eurokraft.org)
- Publication paper: [www.cepilprint.com](http://www.cepilprint.com)
- Fine paper: [www.cepilfine.org](http://www.cepilfine.org)
- Tissue: [www.europeantissue.com](http://www.europeantissue.com)
- Envelopes: [www.fepe.org](http://www.fepe.org)
- Corrugated board: [www.fefco.org](http://www.fefco.org)
- Containerboard: [www.eco-wco.de](http://www.eco-wco.de)
- Cartonboard: [www.cepilcartonboard.com](http://www.cepilcartonboard.com), [www.ecma.org](http://www.ecma.org)
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