

Paper Packaging The Natural Choice



EUROPEAN
CARTON MAKERS
ASSOCIATION

Print, Paper and
Paper Packaging
have a great
environmental
story to tell



www.twosides.info



Awareness of the environmental impacts of our choices has never been greater. Consumers, businesses and governments are all making tangible commitments

A series of recent major events has caused a tipping point for environmental action.

In 2016, the Paris Agreement entered into force. Signed by 196 countries, the landmark treaty is a binding agreement bringing all nations into a common cause to undertake ambitious efforts to combat climate change.

Sir David Attenborough's 2017 *Blue Planet 2* series highlighted the devastating impact our consumption habits are having on the world's oceans and its wildlife. The documentary was a major catalyst for the global effort to tackle plastic pollution that soon followed.

In 2020, Covid-19 dramatically shifted the way we live, work and shop. A boom in e-commerce highlighted the growing impacts of wasteful packaging, while food and raw material shortages served as a powerful reminder of the complex and fragile nature of supply chains around the world.

For many, the pandemic brought a new appreciation of the sensitive interconnectivity of the world, igniting a renewed passion for the environment and a global focus on how we consume the planet's resources.

The journey to a more sustainable future goes far beyond our packaging choices. But as packaging is often the first interaction between consumers and businesses, it is a critical element that, if poorly designed, can have a lasting effect on both consumer perceptions and the environment.

Paper packaging is made from renewable materials. It is durable, attractive, recyclable and biodegradable. It is an essential component of the circular economy.

This booklet sets out eight powerful reasons why paper packaging is the natural choice for brand owners, retailers and consumers.

About Two Sides

Two Sides is a not-for-profit, global initiative promoting the unique sustainable and attractive attributes of print, paper and paper packaging.

Find out more at www.twosides.info

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TWO SIDES

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01. **Paper packaging** helps minimise environmental impacts
03. **Paper packaging** is recycled more than any other material
05. **Paper packaging** offers unrivalled product protection
07. **Paper packaging** supports healthy forests
09. **Paper packaging** helps to tackle climate change
11. **Paper packaging** is attractive and impactful
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Paper Packaging Helps Minimise Environmental Impacts



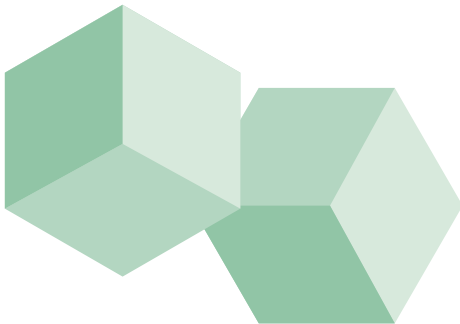
Well-designed, efficiently produced, appropriately used and responsibly disposed-of packaging provides multiple benefits. It is essential to prevent product damage and can help extend a product's life. It helps improve efficiency in the supply chain and provides safe and convenient access to goods. Packaging communicates vital information to the customer whilst providing a great 'unboxing experience' to those receiving gifts or luxury items. However, poor material choices are damaging to both brands and the planet.

The impact on the environment caused by discarded man-made materials has reached critical levels.

Packaging is responsible for a high proportion of waste which, when carelessly disposed of, ends up in the wrong place. Packaging generates more plastic waste than the next four biggest industrial sectors combined.

World Economic Forum, 2020¹

As consumers become more environmentally conscious and hold businesses and their packaging standards to account, the hope is that companies will be incentivised to produce and package more responsibly.²



There is now a greater need than ever for packaging to be sustainable throughout its life cycle. Packaging should incorporate eco-design at its inception, use responsibly sourced raw materials, and be manufactured using efficient processes that are driven by renewable energy.

Packaging should be re-used or recycled wherever possible, then sent to the most appropriate end-of-life solution, such as incineration for energy generation or composting.

Individuals, businesses, governments, public bodies and non-governmental organisations all need to work together to find innovative solutions to meet the ever-increasing need for sustainable packaging products.

The Soil Association, 2020³

Paper packaging is part of the solution. Paper packaging is made from wood fibre, a renewable resource that originates from sustainably managed forests.

In the paper manufacturing process, bioenergy's share of total industry energy use has increased to 62.5%, making the paper and board industry the largest industrial producer and user of renewable energy in Europe.⁴

Paper packaging is the most recycled of all packaging materials. Packaging uses more recycled paper than any other end product and, when combined with virgin paper, ensures a continuous, regenerative 'paper cycle'.

Sustainably sourced paper packaging is also well aligned with the objectives of the United Nations Sustainability Goals.

We are determined to protect the planet from degradation, through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

United Nations,
The 2030 Agenda for Sustainable Development⁵

*Paper Packaging is Recycled
More Than Any Other Material*



Demand for sustainable packaging has never been greater. Paper packaging is not only the most recycled packaging material in Europe, it also utilises an exceptionally high amount of recycled material in its production.

European consumers now have far greater knowledge of the value and provenance of the raw materials used in everyday packaging. Suppliers and the wider packaging industry are working hard to develop solutions that extend the life cycle of packaging materials, helping to eliminate the use of non-recyclable, single-use packaging.

In 2018, the European paper and cardboard recycling rate was 83% – the highest of any packaging material.

Eurostat, 2018⁶

Paper and cardboard is the most recycled packaging material in Europe. In 2018, 82.9% of all paper and cardboard was recycled, outperforming metallic packaging (80.1%), glass packaging (74.7%) and far exceeding that of plastic packaging (41.8%).⁷

Looking back at the progress made since 1998 – the base year for the first voluntary commitment set in the European Declaration on Paper Recycling – paper recycling has increased by 40% (16 million tonnes).⁸

Thanks to its leading recycling rate and developed collection systems, paper packaging production in Europe utilises an exceptional amount of recycled content.

94% of the fibre used to produce corrugated board in Europe comes from paper for recycling. Carton board utilises 35% paper for recycling.

CEPI, 2020⁹

In Europe, paper fibres are recycled and re-used 3.8 times on average.¹⁰ However, laboratory experiments have shown fibres can be recycled significantly more, up to 25 times.¹¹ Developing efficiencies in recycling processes, improving collection systems and increasing consumer action may one day help realise this potential.

Even with such a high recycling rate, the fibre-based packaging value chain remains focused on improving this further.

The European paper packaging industry aims to reach an ambitious recycling rate of 90% by 2030.

4evergreen, 2021¹²

4evergreen, the cross-value chain alliance initiated by CEPI (learn more on p.16), has set an ambitious recycling target, to reach a 90% recycling rate for fibre-based packaging by 2030.

To reach this goal, *4evergreen* has identified four intermediary targets to be met by 2025:

1. Industry adopts *4evergreen's* recyclability evaluation protocol and its circularity by design guidelines for fibre-based packaging.
2. Separate collection streams are available for all fibre-based packaging types, including those used in household, out-of-home and on-the-go consumption.
3. All paper for recycling is sorted according to the different paper and board categories specified in the EN643 standard.
4. All collected fibre-based packaging, specifically from household, out-of-home and on-the-go consumption, is recycled.

Learn more: www.4evergreenforum.eu

*Paper Packaging Offers
Unrivalled Product Protection*



Packaging plays an essential role in minimising damage and extending a product's life. Without appropriate packaging, there would be a greater risk of the resources used to make the product being wasted.

The UK and the European Commission's Waste Hierarchies both give highest priority to the prevention of waste.^{13,14} However, brand owners and manufacturers must ensure the elimination or reduction of packaging does not risk damaging or shortening the life of the product.

On average, ten times more resources (materials, energy and water) are invested in products compared with the resources used to produce their packaging.

Food and Drink Federation, 2017¹⁵

The paper packaging industry has been at the forefront of developing solutions that maximise product protection whilst minimising the environmental impacts of the packaging itself.

Paper is an incredibly versatile material that can be formulated in a multitude of ways to alter its strength and even stretch to meet the requirements of the most demanding packaging applications. There are a number of great examples of innovative paper-based packaging applications that do not compromise product protection.

In Europe, 62% of folding cartons produced are used to package food.

Pro Carton, 2021¹⁶

Cartonboard packaging adds value to a product, increasing its overall resource efficiency through reducing food waste. By protecting food and reducing food waste, cartons contribute to more sustainable consumption and benefit society by making our modern, convenience-driven lifestyles possible.

The European beverage carton industry is committed to a 70% recycling rate by 2030.

Alliance for Beverage Cartons & The Environment¹⁷

Beverage cartons, made from 75% renewable material on average, can directly substitute plastic bottles and glass bottles, offering a low carbon solution. In 2019, 51%* of beverage cartons were recycled in Europe. However, the industry has set an ambitious 2030 commitment that 90% of all beverage cartons are collected for recycling and at least 70% of all beverage cartons are recycled.¹⁸

The dramatic rise in e-commerce amid movement restrictions induced by Covid-19 increased online retail sales' share of total retail sales from 16% to 19% in 2020.¹⁹

Corrugated boxes used for transit packaging have a great story to tell. The rigid yet lightweight nature of multi-layered corrugated boxes helps to make the material highly resistant to vertical compression, providing a strength-to-weight ratio that is totally unique. In addition to this ingenious construction that provides remarkable shock absorption qualities, corrugated boxes also offer excellent thermal insulation²⁰, whilst also reducing costs in production and transit relative to other rigid materials.

A new innovation that is gaining traction in e-commerce is paper mailing bags. These robust, lightweight and tear-resistant bags provide an ideal alternative to plastic bags. Paper e-commerce bags offer comparable functionality to plastic, but are easy to recycle through home collection systems and, according to studies, can have a lower carbon footprint than virgin and recycled PE (polythene) bags.²¹

*Based on the 2019 calculation method.



*Paper Packaging
Supports Healthy Forests*

Paper packaging utilises an exceptional amount of recycled material, but fibres cannot be recycled indefinitely, so a steady stream of fresh fibres from sustainably managed forests will always be needed. Responsible harvesting of wood ensures long-term forest growth.

Forests are one of the world's most valuable resources and home to more than half the world's land-based animal and plant species.²²

Over the past four decades they have moderated global warming by absorbing around a quarter of the carbon dioxide emitted by human activities. Carbon sequestration in forests reduces the rate at which carbon accumulates in the atmosphere and so reduces the rate at which climate change occurs.²³

Forests cover 31% of the world's total land area and contain most of the world's terrestrial biodiversity. Forests provide habitats for 80% of amphibian species, 75% of bird species and 68% of mammal species.²⁴

Forests provide more than 86 million green jobs globally and support the livelihoods of many more people. They are vital for the conservation of biodiversity, energy supply, and soil and water protection.²⁵

Deforestation and forest degradation continue to take place at alarming rates. Since 1990, it is estimated that some 420 million hectares of forest have been lost through conversion to other land uses.²⁶

Agriculture (primarily cattle ranching and the cultivation of soya beans and oil palm) accounts for 73% of tropical deforestation.²⁷

While deforestation is taking place in some areas, new forests are being established through natural expansion or deliberate efforts in others.

Between 2005 and 2020, European forest cover grew by 58,390km² – an area larger than Switzerland and equivalent to 1,500 football pitches of forest growth every day.

Two Sides analysis of FAO data, 2005-2020²⁸

Forests cover 40% of the European territory, with a total volume of 28 billion m³, and are growing by around 612 million m³ annually. This is a net annual growth of more than 2% once the volume of harvested wood has been deducted.²⁹

Paper packaging utilises an exceptional amount of recycled material (see p.4), but paper fibres cannot be recycled indefinitely, so there will always be a need for fresh/virgin wood fibre, from sustainable sources, to enter the cycle.

Certification is important to communicate and demonstrate to stakeholders and final wood-product consumers the sustainability of forest management and its products.

The most common forest certification schemes in Europe are FSC® (Forest Stewardship Council) and PEFC™ (the Programme for the Endorsement of Forest Certification).



Nearly 105 million hectares (ha), 52% of the forest area in Europe, is certified.

Forest Europe, 2021³⁰

*Paper Packaging Helps To
Tackle Climate Change*



Through its contribution to the bioeconomy, the forest products industry plays a critical role in mitigating the impacts of climate change and reducing greenhouse gas emissions through carbon sequestration and improved resource efficiency.

Between 2010 and 2020, the average annual sequestration of carbon in forest biomass reached 155 million tonnes in the European region. In the EU-28, sequestration corresponds to around 10% of gross greenhouse gas emissions.

Forest Europe, 2021³¹

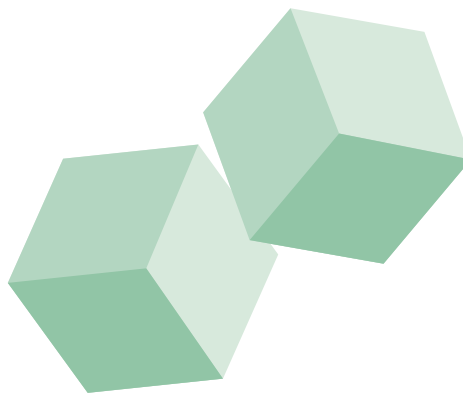
Carbon is sequestered in biomass through tree growth. As a result, forests contain large stocks of carbon in biomass, dead organic matter and soil, which can either increase or decrease, depending on forest management practices and the frequency and severity of natural disturbances.

Demand for responsibly produced wood products, such as timber, paper, and paper packaging, ensures the long-term growth of forests. Carbon stock in forest biomass in Europe is increasing, representing a significant sink of CO₂ emissions.³²

When a tree is harvested, the carbon is no longer stored in the forest but remains in the products produced from the wood, such as paper, paperboard and timber.

FAO, 2021³³

Paper recycling helps to extend the period during which the carbon is locked away. The wood fibres contained within paper packaging can be used throughout multiple product life cycles. When the fibres cannot be processed anymore, they can be used as a biofuel in the creation of green energy.



Forests play a critical role in mitigating CO₂ levels, but reducing emissions from manufacturing processes is just as essential as protecting forest resources.

The European paper industry has reduced its carbon emissions by 26% since 2005.

CEPI, 2020³⁴

The European paper industry has reduced its carbon emissions by 26% since 2005 and increased the share of renewable energy consumption to 62%.³⁵

The corrugated board sector, in just three years between 2015 and 2018, reduced the carbon emissions of one tonne of product by 11%.³⁶

At a product level, the European kraft paper and paper sack industry has put further efforts into improving its carbon footprint. Between 2015 and 2018, the carbon intensity of a single paper sack was reduced by 8%.³⁷

*Paper Packaging Is
Attractive And Impactful*



Paper packaging is versatile and hugely effective, whether used for storage, transit, displayed in-store or used in the home. For many brands, the packaging is part of the product, and the design and sustainability credentials of the packaging is of huge importance.

In all retail environments, appealing emotionally to consumers is a modern challenge. Packages that communicate on a multi-sensory level offer brands the opportunity to stand out and inspire others. They not only explain the advantages of the product but also tell stories that create a platform for the brand to shine.³⁸

As a product that consumers touch, use and dispose of, packaging is now a key medium to transmit a brand's green credentials.

Smithers, 2020³⁹

Demonstrating paper packaging's environmental credentials is one way brand owners and retailers can connect with consumers. However, sustainability is just one of paper packaging's unique selling points. Packaging is all about getting people's attention, communicating and making a connection – much like art. This may be the reason why one packaging trend in 2021 saw designers borrowing from the art world.⁴⁰

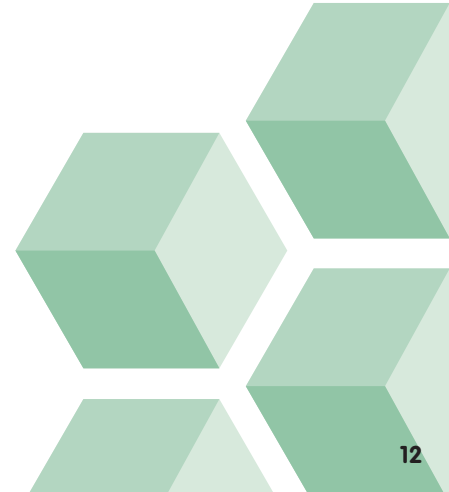
The practical impact that paper packaging can have with consumers is best displayed at a product level.

Cartons are ideal for presenting the latest digital technology to help brand owners and retailers communicate with customers. This technology includes QR codes, interaction via augmented reality, and RFID tags. Carton designs also lead the way in innovation and brand promotion, especially for prestigious and premium goods. The ability to continuously innovate makes cartons the sustainable choice for today and the future.⁴¹

Transit packaging can also be used creatively to display and promote products. 'Shelf-ready packaging' that uses printed corrugated board allows brand owners to safely transport their goods and display them prominently in store using the same package. E-commerce mailing bags often use unbleached brown paper to demonstrate to a brand's customers that the ecological impact of its packaging has been well considered.

New printing techniques are also being used to satisfy the most sophisticated of graphic design requirements, and the introduction of new technologies has had a big impact on packaging design. Digital printing techniques now allow the economical production of prototypes, sales samples and limited production runs for test markets, resulting in a remarkable increase in the possibilities for 'speed to market' in new product launches.

Sustainable paper packaging is a great way for brand owners and retailers to communicate and engage with consumers.



Paper Packaging Is Preferred By Consumers



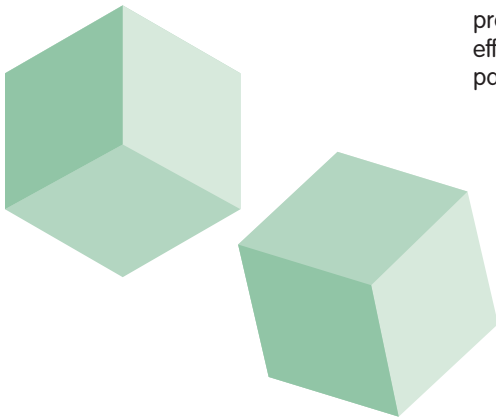
Packaging is often the first physical interaction between a brand and its customers. As consumer demand for sustainable packaging grows, businesses have a unique opportunity to enhance perceptions of their brands through their packaging choices.

Using sustainable packaging helps brands positively connect with consumers.

Sustainability is at the forefront of consumers' and regulators' minds, and the challenge for consumer brands has become clear. It is no longer a question of *if* brands should shift to more sustainable packaging, but *how*.

67% of consumers now identify as environmentally aware. In Europe, 74% of consumers consider eco-friendly packaging important.

Trivium Packaging & Boston Consulting Group, 2020⁴²



Over the last five years, the forces pushing for sustainability have strengthened around the world. FMCG companies and retailers have made bold commitments responding to public concerns about single-use packaging waste. More recently, the Covid-19 pandemic has further reshaped the sustainability sentiment.

Concern for the environment is not normally led by legislators, more generally they are responding to interest from the general public and other interest groups. Strong pressure is now being applied to brand owners by consumers. Ocean pollution of non-biodegradable materials has become widely understood following increasing media attention.⁴³ Consumers are demanding products that use responsibly sourced, efficiently produced and fully recyclable packaging.

A 2020 survey found that consumers are adapting their purchasing behaviours to reflect shifting environmental preferences. 70% of consumers are actively taking steps to reduce their use of plastic packaging. Nearly half (48%) of consumers would even avoid retailers that are not actively trying to reduce their use of non-recyclable packaging.⁴⁴

In another recent study, 75% of European consumers say the environmental impact of a product's packaging affects their decision-making process. 77% said they would pay more for a product if it came in more sustainable packaging, with one in five willing to pay 10% or more extra.⁴⁵

Paper packaging is preferred by consumers for many environmental and practical attributes, including:

- Home compostable, 72%
- Better for the environment, 55%
- Easier to recycle, 51%
- Lighter weight, 62%
- Easier to open, 41%
- Easier to store, 41%

Two Sides & Toluna, 2020⁴⁶

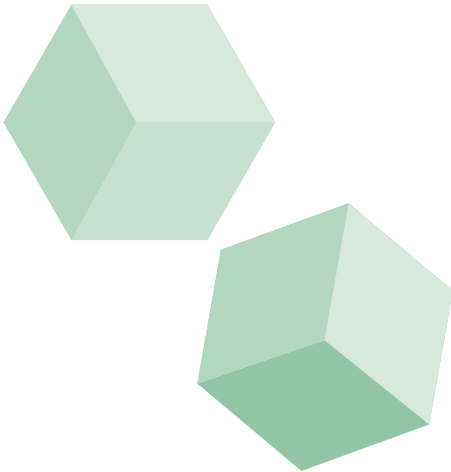
*Paper Packaging Is Part Of
The Circular Economy*



Paper packaging fits into the circular economy model seamlessly. Its raw material, wood fibre, is a renewable, natural and sustainable resource. Paper packaging is easily collected and recycled, ensuring these valuable fibres are used time and time again.

A circular economy is a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the ‘take-make-waste’ linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources.

Ellen MacArthur Foundation⁴⁷



The European paper industry is building on decades of work done to make its industrial model circular, making it one of the most sustainable industries in Europe.

It relies on raw materials, pulp derived from processing wood, which is intrinsically sustainable as it comes from sustainably managed forests. It has achieved 26% decarbonisation since 2005 and has become an anchor industry for industrial symbiosis, sharing materials, heat energy and water.⁴⁸

Paper is recycled at a rate of 74% (2020) in Europe, which is the highest recycling rate for paper in the world. Paper packaging has an even higher recycling rate of 83% (2018) and more paper-based packaging is recycled than all other packaging materials combined. The paper industry strives to further increase recycling and material use of recycling residues through the sharing of best practice and the development of cross-sectorial alliances.⁴⁹

The European paper industry has been at the forefront of industrial change, pioneering cross-sector collaborations and structural changes to achieve green goals.

In 2019, the Confederation of European Paper Industries (CEPI) initiated *4evergreen*, an ambitious cross-industry alliance. Members come from across the fibre-based packaging value chain, from paper and board producers, packaging converters, and brand owners and retailers, to technology and material suppliers, waste sorters and collectors. *4evergreen* seeks innovation in packaging performance and functionality, as well as improving performance in recycling systems to reach the full potential of the circular economy.⁵⁰

Collaboration throughout the supply chain is fundamental to the success of the circular economy of the future.

Glossary

Bio-based products: Material of biological origin excluding material embedded in geological formations and/or fossilized.

Bioeconomy: Includes primary production, such as agriculture, forestry, fisheries and aquaculture, and industries using/processing biological resources, such as the food and pulp and paper industries, and parts of the chemical, biotechnological and energy industries.

Bioenergy: Renewable energy made from biomass or biofuel.

Biofuels: Liquid fuels for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass.

Biomass: Biodegradable fraction of products, waste and residues of biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste.

Carbon dioxide (CO₂): A naturally occurring gas, also a by-product of burning fossil fuels from fossil carbon deposits, such as oil, gas and coal, of burning biomass, of land use changes and of industrial processes (e.g. cement production).

Carbon footprint: The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation or community.

Carbon sequestration: A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.

Cartonboard: May be single or multiply, coated or uncoated. It is made from virgin and/or recovered fibres, and has good folding properties, stiffness and scoring ability. It is mainly used in cartons for consumer products such as frozen food, cosmetics and for liquid containers. Includes solid board, solid bleached board, solid unbleached board, folding box board, white lined chipboard, boxboard or carrier board.

Climate change: Long-term significant change in the expected patterns of average weather of a specific region over an appropriately significant period of time.

Collection (of paper and board): Separate collection of paper and paper products from industrial and commercial outlets, households and offices for recycling. (Collection includes transport to the sorting/processing or recycling plant/paper mill.)

Consumer: Industrial, commercial or private end-user.

Containerboard: Papers and boards mainly used in the manufacture of corrugated board. They are made from any combination of virgin and recovered fibres and can be bleached, unbleached or mottled. Main uses are corrugated boxes, transport packaging, storage and product display.

Deforestation: The conversion of forest to other land use or the long-term reduction of the tree canopy cover below the minimum 10% threshold.

E-commerce: Commercial transactions conducted electronically on the internet.

Eco-design: Consists of integrating environmental protection criteria over a service or a product's lifecycle. The main goal of eco-design is to anticipate and minimise negative environmental impacts (of manufacturing, using and disposing of products).

Emissions: The direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources into air, water or land.

Energy: All energy products, consisting of hard coal and derivatives, lignite and derivatives, peat and derivatives, crude oil and petroleum products (such as LPG, refinery gas, motor spirit, kerosene, gas/diesel oil, residual fuel oil, refuse-derived fuels, solid recovered fuel), natural gas, manufactured gases, derived heat, renewable energies, electrical energy and nuclear energy.

Fibres: Derived from wood, non-wood fibre sources such as fibre crops (straw, bamboo, bagasse, etc.) or alternatively paper for recycling, through a recycling process.

Forest: Land within a contiguous area with trees higher than five meters and a canopy cover of more than 10%, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Forest certification: A system for verifying that a forest is being managed sustainably according to the requirements of a forest management standard.

Fossil fuels: A fuel formed by natural processes, such as decomposition of buried dead organisms, containing organic molecules originating in ancient photosynthesis that release energy in combustion. Fossil fuels contain high percentages of carbon and include petroleum, coal and natural gas.

Global warming: A gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide, CFCs and other pollutants.

Greenhouse gas (GHG): The gaseous constituents of the Earth's atmosphere, both natural and anthropogenic, with properties that cause the greenhouse effect. Water vapour (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄) and ozone (O₃) are the primary greenhouse gases in the atmosphere.

Paper and board: The paper and paperboard category is an aggregate category. In production and trade statistics, it represents the sum of graphic papers, sanitary and household papers, packaging materials and other paper and paperboard. It excludes manufactured paper products such as boxes, cartons, books and magazines, etc.

Paper for recycling: Natural fibre-based paper and board suitable for recycling and consisting of paper and board in any shape and products made predominately from paper and board. This may include other constituents that cannot be removed by dry sorting, such as coatings and laminates, spiral bindings, etc.

Paper mill: A factory or plant location where various pulps in slurry form are mechanically treated, mixed with the proper dyes, additives, and chemicals, and converted into a sheet of paper by the processes of drainage, formation, and drying on a paper machine.

Planted forest: Forest predominantly composed of trees established through planting and/or deliberate seeding.

Primary forest: Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Recyclability: Design, manufacturing and converting of paper-based products in such a way as to enable a high quality recycling of fibres and other materials in a manufacturing process in compliance – where appropriate – with current standards in the community: as a minimum, recyclability requires that sufficient information is exchanged for appropriate risk management and safe re-use of fibres.

Recycling: Reprocessing of used paper in a production process into new paper and board.

Recycling rate: The ratio between recycling of used paper, including net trade of paper for recycling, and paper and board consumption.

Sustainable: Something that can be continued or a practice that maintains a condition without harming the environment. An example of sustainable is the practice of reduce, reuse and recycle.

Sustainable forest management: The stewardship and use of forests and forest land 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.

Virgin pulp/primary pulp: Pulp consisting of unused fibres. It contains no secondary or recycled fibres.



Glossary sources: CEPI, FAO

Never before has there been such global momentum towards a more sustainable future through a circular economy.

To avoid reaching critical levels of climate change, businesses, legislators and consumers will all need to make far-reaching decisions about how we produce, consume and dispose of the world's resources.


This booklet only scratches the surface, but much can be learned from an industry that can claim to be truly sustainable.

Paper packaging is renewable, highly recycled and the preferred choice of consumers. Continued innovations, ambitious targets and cross-sector alliances will ensure paper remains the natural choice for packaging and many other circular applications.

For more information about the sustainability, versatility and importance of paper-based packaging, please visit: **www.twosides.info**

Sources

- World Economic Forum, 7 ways packaging is changing to reduce plastic waste, 2020 - <https://www.weforum.org/agenda/2020/12/sustainable-packaging-reduce-plastic-waste/>
- World Economic Forum, Sustainable packaging is good for profits as well as the planet, 2019 - <https://www.weforum.org/agenda/2019/01/most-plastic-packaging-is-not-recycled-that-has-to-change/>
- The Soil Association, Sustainable Packaging Report: The case for paper, 2020 - <https://www.soilassociation.org/certification/forestry/paper-packaging-resources/sustainable-packaging-report/>
- CEPI, Key Statistics 2020, 2021 - <https://www.cepi.org/key-statistics-2020/>
- United Nations – Transforming Our World, The 2030 Agenda for Sustainable Development - <https://sdgs.un.org/2030agenda>
- Eurostat, Recycling rate of packaging waste by type of packaging (EU28), 2018 - https://ec.europa.eu/eurostat/databrowser/view/cei_wm020/default/table?lang=en
- Eurostat, Recycling rate of packaging waste by type of packaging (EU28), 2018 - https://ec.europa.eu/eurostat/databrowser/view/cei_wm020/default/table?lang=en
- European Paper Recycling Council, Monitoring Report 2020, 2021 - <https://www.paperforrecycling.eu/publications/>
- CEPI, Key Statistics 2020, 2021 - <https://www.cepi.org/key-statistics-2020/>
- CEPI, Key Statistics 2020, 2021 - <https://www.cepi.org/key-statistics-2020/>
- Technische Universität Darmstadt, Multiple recycling of paperboard: Paperboard characteristics and maximum number of recycling cycles, 2019 - <https://imisrise.tappi.org/TAPPI/Products/19/NOV/19NOV631.aspx>
- 4evergreen Forum website, About, accessed Aug 2021 - <https://4evergreenforum.eu/about/>
- UK Government/ DEFRA, Guidance on applying the Waste Hierarchy, 2011 - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf
- European Commission, Waste Framework Directive - https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en
- Food & Drink Federation, Packaging for people, planet and profit – a sustainability checklist, 2017 - <https://www.fdf.org.uk/globalassets/resources/publications/packaging-checklist.pdf>
- Pro Carton website, Safety, accessed Aug 2021 - <https://www.procarton.com/choose-cartons/safety/>
- The Alliance for Beverage Cartons & The Environment, Road Map to 2030 and Beyond, 2021 - <https://www.beveragecarton.eu/wp-content/uploads/2021/03/The-Beverage-Carton-Roadmap-to-2030-1.pdf>
- The Alliance for Beverage Cartons & The Environment, Road Map to 2030 and Beyond, 2021 - <https://www.beveragecarton.eu/wp-content/uploads/2021/03/The-Beverage-Carton-Roadmap-to-2030-1.pdf>
- United Nations Conference On Trade And Development (UNCTAD), Estimates of Global e-commerce, 2021 - https://unctad.org/system/files/official-document/tn_unctad_ict4d18_en.pdf
- FEFCO website, Efficient and Cost Effective, accessed Aug 2021 - <https://www.fefco.org/benefits-corrugated/meet-business-requirements/efficient-and-cost-effective>
- RISE, Comparing The Environmental Profile of Mailer Bags, 2020 - <https://info.billerudkorsnas.com/en/fight-climate-change-with-paper-mailing-bags>
- WWF website, Why Forests Are So Important, accessed Aug 2021 - <https://www.wwf.org.uk/where-we-work/forests>
- Government of Canada website, Forest Carbon, accessed Aug 2021 - <https://www.nrcan.gc.ca/climate-change/impacts-adaptations/climate-change-impacts-forests/forest-carbon/13085>
- FAO and UNEP, The State of the World's Forests, 2020 - <https://doi.org/10.4060/ca8642en>
- FAO and UNEP, The State of the World's Forests, 2020 - <https://doi.org/10.4060/ca8642en>
- FAO and UNEP, The State of the World's Forests, 2020 - <https://doi.org/10.4060/ca8642en>
- WWF website, 10 Myths About Deforestation, accessed Aug 2021 - <https://www.wwf.org.uk/10-myths-about-deforestation>
- Two Sides analysis of FAO data, based on State of The World's Forests 2020 - https://www.twosides.info/documents/Forest_Growth_Briefing_Document-2020.pdf
- Forest Europe, State of Europe's Forests 2020 - https://foresteurope.org/wp-content/uploads/2016/08/SoEF_2020.pdf
- Forest Europe, State of Europe's Forests 2020
- Forest Europe, State of Europe's Forests 2020
- Forest Europe, State of Europe's Forests 2020
- FAO, Carbon Storage and Climate Change Mitigation Potential of Harvested Wood Products, 2021 - <http://www.fao.org/forestry/49800-0812a13ea8526559335c760f45630d3d.pdf>
- CEPI, Key Statistics 2020, 2021 - <https://www.cepi.org/key-statistics-2020/>
- CEPI, Key Statistics 2020, 2021 - <https://www.cepi.org/key-statistics-2020/>
- FEFCO, The carbon footprint of corrugated packaging, 2019 - https://www.fefco.org/sites/default/files/documents/The%20carbon%20footprint%20of%20corrugated%20packaging%202018_final-recalculated%202019_1.pdf
- EuroSac, Significant improvement of environmental footprint of paper sacks, 2021 - <https://www.euroSac.org/media/news/significant-improvement-of-environmental-footprint-of-paper-sacks>
- Eye Square website, Pack Design Test, accessed Aug 2021 - <https://www.eye-square.com/en/pack-design-test/>
- Smithers, Packaging Sustainability Trends: The Greener Future of Packaging, 2019 - <https://www.smithers.com/resources/2019/dec/packaging-sustainability-trends-guide>
- European Brand & Packaging Design Association, Why packaging is taking inspiration from the world of art, 2021 - <https://www.epda-design.com/why-packaging-is-taking-inspiration-from-the-world-of-art/>
- Pro Carton, Cartons' Modern Design & Production, 2017 - https://www.procarton.com/wp-content/uploads/2017/01/cartons_modern_design_and_production.pdf
- Trivium Packaging & Boston Consulting Group, 2020 Global Buying Green Report - <https://triviumpackaging.com/sustainability/2020BuyingGreenReport.pdf>
- Smithers, Packaging Sustainability Trends: The Greener Future of Packaging, 2019 - <https://www.smithers.com/resources/2019/dec/packaging-sustainability-trends-guide>
- Two Sides & Toluna, European Packaging Preferences 2020 - https://www.twosides.info/documents/research/2020/packaging/European-Packaging-Preferences-2020_EN.pdf
- Pro Carton, European Consumer Packaging Perceptions Study, 2018 - <https://www.procarton.com/wp-content/uploads/2018/10/European-Consumer-Packaging-Perceptions-study-October-2018.pdf>
- Two Sides & Toluna, European Packaging Preferences 2020 - https://www.twosides.info/documents/research/2020/packaging/European-Packaging-Preferences-2020_EN.pdf
- Ellen MacArthur Foundation website, The Circular Economy in Detail, accessed Aug 2021 - <https://archive.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail>
- CEPI, Sustainability and Circularity, 2021 - <https://www.cepi.org/policy-area/sustainability-circularity/>
- CEPI, Sustainability and Circularity, 2021 - <https://www.cepi.org/policy-area/sustainability-circularity/>
- 4evergreen Forum website, About, accessed Aug 2021 - <https://4evergreenforum.eu/about/>

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