

A young girl with curly hair, wearing a red top, is smiling and holding a small potted tree. The background is a blurred green forest.

Getting the complete picture.

Our environmental performance analysis
throughout the product life-cycle.



SIG Combibloc



There are goals that just cannot be high enough.

We're delighted that, with our carton packs, we're able to offer our customers and consumers all over the world one of the most ecologically advantageous packaging forms available for long-life foods. And we'd like to keep it that way in the future. So we're setting ourselves ambitious targets in order to further reduce the ecological footprint of our products and our production processes. Because we believe there's nothing that we couldn't do even better than we're already doing it.

This is the challenge we've set ourselves. And to help us meet this challenge, we have all the information at a glance: the life-cycle of our packaging, from the extraction and refining of the raw materials, right up to the disposal or recycling of the carton packs after use. Independent, critically audited life-cycle assessments conducted by noted specialist institutes help us to identify precisely those parameters in the life-cycle of our carton packs where we can make changes to produce the greatest possible benefit for the environment. For us, that means 'sustainable development' in the original sense of the term, beyond just a short-term image boost.

We're firmly convinced that we're on the right track, and we will continue to take action right where it matters – for the environment, and for the generations that will come after us.



Rolf Stangl
CEO SIG Combibloc

On the right track.

Thinking and acting in a way that is ecologically advantageous, and the integrated and systematic management of all environmental considerations, are an inherent part of SIG Combibloc's global corporate strategy. Now, we are letting people know all about our global strategy for caring for the environment, by bringing together all the environmentally relevant performance figures relating to our production processes around the world. The reporting period runs from 1 January 2009 to 30 June 2012. This document clearly sets out our responsible conduct in terms of protecting the environment, and is produced for the benefit of all stakeholders – first and foremost representatives of the food industry and retail, as well as organisations dealing with consumer protection and environmental protection. As a source of information, it can also be of use to suppliers, public authorities, consumers and our employees. The document incorporates relevant data on the manufacture of carton packs and closures. The production-specific performance figures shown refer to one square metre of manufactured packaging material in each case. The figures given in the consumption diagrams correspond to percentage figures, whereby the reporting year (2009) has been treated as equivalent to 100 per cent. The production-related figures incorporate the data relating to the following SIG Combibloc production sites:

- Linnich, Germany
- Lutherstadt Wittenberg, Germany
- Saalfelden, Austria
- Neuhausen/Rheinfall, Switzerland
(SIG allCap AG, manufacture of closures)
- Rayong, Thailand
- Suzhou, China
- Curitiba, Brazil



Pg. 8 We protect foods. And care for the environment

As one of the world's leading system manufacturers of carton packaging and filling machines for food and beverages, we make sure that quality, innovation and caring for the environment go hand in hand.

Pg. 10 Getting the complete picture

We consider the environmental performance analysis of our carton packs along the entire product life-cycle.

Pg. 28 Our ambition

We want to make sure our carton packs are among the most ecologically advantageous packaging systems available for food and beverages. The choice of the raw materials we use to manufacture our packaging offers the most effective opportunity for us to make a contribution to protecting the environment. In addition, however, we also look further along the product life-cycle to identify environmental goals, determine appropriate actions, and implement them consistently.

OUR ENVIRONMENTAL PERFORMANCE ANALYSIS THROUGHOUT THE PRODUCT LIFE-CYCLE

Pg. 30

Production of raw materials

Carton packs are manufactured up to around 75 per cent from the renewable resource wood – clearly setting them apart from alter-

Pg. 40 Processing

We also work to improve the environmental profile of our carton packs during processing in our production plants. Reducing energy consumption and further minimising CO₂ emissions and the specific waste volumes are among our primary objectives in this respect.



Pg. 18 Life-cycle assessments

Scientifically sound, ISO-compliant life-cycle assessments help us identify where we can most effectively take action to further minimise the overall environmental impact of our carton packs.

native forms of packaging. We set the highest standards in the selection of the materials we use to make our carton packs. And when it comes to new product developments and enhancements to existing products, too, we strive to increase as far as possible the proportion of this renewable resource that goes into our carton packs – for the environment's sake.





Pg. 48 Secondary packaging

The logistical advantages of carton packs have a direct bearing on the design of the secondary packaging they require. Thanks to the light weight and the shape of the carton packs, and their stability, the secondary packaging can be kept to a minimum, and therefore precious resources are not wasted. We work closely with the downstream equipment manufacturers to ensure the secondary and tertiary packaging for our carton packs is the best it can be.



Pg. 52 Disposal and recycling

Our commitment to preserving valuable resources goes far beyond the design and manufacture of our products, and includes their disposal and recycling. Promoting recycling is part of SIG Combibloc's environmental sustainability strategy.



FOCAL POINTS OF OUR COMMITMENT TO THE ENVIRONMENT.

Pg. 46 Filling process

As a system manufacturer, we also have our eye firmly on the environmental profile of our filling machines. Innovations are always developed against the background of continuously reducing the impact on the environment.



Pg. 50 Distribution

Carton packs are enormously efficient in terms of transportation and distribution logistics. The transportation advantages associated with carton packs reduce emissions and the consumption of fossil resources.



Pg. 58 Life-cycle assessments: carton packs show favourable results in all market segments

With the results of recent scientific life-cycle assessments for packaging solutions for UHT milk, non-carbonated soft drinks and food products, we now have to hand a valid data set that includes assessments of the environmental impact of carton packs compared to packaging alternatives – in every market segment for which we offer packaging solutions. The studies prove it: compared to other packagings, carton packs can reduce CO₂ emissions, and save on primary energy and fossil resources.

Pg. 62 More pioneering achievements: SIG Combibloc launches FSC®-labelled carton packs world-wide

SIG Combibloc is able to offer customers across the globe carton packs that are permitted to carry the 'FSC Mix' label (trademark license code FSC® C020428). Following a successful start in Europe, it was not long before the first beverage cartons with an FSC® label were launched in China, the USA and South Africa – all carton packs manufactured by SIG Combibloc. SIG Combibloc carton packs carrying the FSC® label are now available in Europe, Asia, North and South America and Africa. In June 2012, the proportion of SIG Combibloc carton packs that were FSC®-labelled was 16 per cent.

Pg. 68 Recycling – world-wide

Once they have been emptied, SIG Combibloc carton packs can be recycled, and the empty packages are also compatible with all other national recovery and waste management options. A requirement for successful recycling is an efficient collection and sorting system. Actively supporting the development and expansion of national collection and recycling systems, in countries such as China, Thailand, Brazil and Great Britain, is part of SIG Combibloc's environmental sustainability strategy.

We protect foods. And care for the environment.

SIG Combibloc is one of the world's leading system manufacturers of carton packs and filling machines for beverages and food. The company is part of the New Zealand based Rank Group and has production sites and offices all over the world. SIG Combibloc employs around 4,800 staff. SIG Combibloc supports its customers throughout the entire process – from market analysis and the design and development of new product concepts, right up to designing the packaging. The engineering and installation of the filling equipment, including the complete after-sales service package, are also part of the company's offer.

At SIG Combibloc's sites in Linnich (Germany) and Rayong (Thailand), the research and development centres have their sights fixed firmly on the future. In addition to the development of new carton package formats, and new filling machines, priority is given to the optimisation of existing systems (machines, packaging material, processes). Microbiological analyses and the process support of prototypes are other focuses of the research and development divisions. Collaborative ventures with academic and scientific institutes, universities and suppliers are also managed from these sites.

One of the most important functions of a packaging is to protect the food it contains. In aseptic carton packs from SIG Combibloc, foods and beverages are hygienically packaged and perfectly protected from light and air. Carton packs preserve the quality of the products and ensure that the natural flavours, nutrients and vitamins are retained and the products remain usable for a prolonged period – without refrigeration and preservatives.



Reduced to the maximum

Alongside the aseptic process, the carton's special composite structure is the crucial factor in providing this protection. The packaging material is made up of three components: raw paperboard, polymers and aluminium. Making up around 75 per cent of the composite, paperboard is the main component, and gives the package stability. The inner polymer layers form a liquid barrier for the food, while the outer polymer layer keeps moisture out. The aluminium safeguards the contents against light, oxygen and external odours. Approximately 27 grammes of packaging material is sufficient to package one litre of product. The packaging therefore makes up less than three per cent of the total weight of the filled carton pack.

Each year, SIG Combibloc's packaging material plants produce the packaging material to manufacture more than 22 billion carton sleeves. To make these sleeves, the raw paperboard is coated with polymers on both sides. A wafer-thin layer of aluminium is added to ensure that the foods subsequently filled into the carton packs will have an extended shelf-life. Next, the paperboard is printed with the customer's particular design and cut to fit for the various carton formats and sizes. These blanks are stamped with very precisely scored lines, making them ready for subsequent folding, and the longitudinal seam is then sealed. The flat carton sleeves thus produced are delivered to the filling company, palletised to save space, and are filled there on filling machines from SIG Combibloc. The filling machines shape each carton sleeve individually and seal the base. The interior of the package is then sterilised. In the aseptic zone of the filling machine, the already sterilised product is filled into the carton pack. Finally, the carton pack is ultrasonically sealed above the fill level – and not through the product – to prevent solid product components from becoming trapped in the sealed seam. After the aseptic filling process has taken place and the package has been sealed within the aseptic zone of the filling machine, an optional closure may be applied to the sealed carton pack.

Certified for quality, environment and hygiene

For SIG Combibloc, as a supplier to the food industry, quality, safety, environmental management and hygiene are key issues in enabling the company to meet customer needs all over the world. For this reason, at all production sites and at SIG Combibloc's research and development centres, certified quality management systems in accordance with ISO 9001 and environmental management systems in accordance with ISO 14001 are implemented. In addition, certified hygiene management systems in accordance with the internationally established HACCP principles (hazard analysis and critical control points) have been put in place. The objective of the hygiene management system is to guarantee that the packaging material and the packaging system are food-safe in line with food legislation, and to ensure a high level of hygiene within the production and storage areas.

The company history of SIG Combibloc dates back to 1878, when Ferdinand Emil Jagenberg founded a stationery business that he expanded into a machine building plant for the processing and finishing of paper in Düsseldorf. In 1930, the company applied for a patent for 'perga': Europe's first liquid-tight, flexible paperboard-based packaging. With the commercial launch of 'combibloc', a packaging system for the sterile filling of long-life foods, SIG Combibloc made its international breakthrough in 1975. In addition to filling milk and juice, since 1985 it has also been possible to process soups, sauces and desserts containing chunky ingredients. In 1993, SIG Combibloc launched the world's first opening solution for beverage cartons, the combiTop flat closure.

Carton packs from SIG Combibloc protect the quality of foods. At the same time, carton packs are easy on the environment – the following pages provide more detailed information on this.



We look at the bigger picture to understand what matters.



We have made it our aim to strive on an ongoing basis to optimise our food and beverage cartons in terms of their environmental impact, while also maintaining the cartons' function in safeguarding the quality of the products they contain. As part of this process, we examine the performance of our carton packs along the entire product life-cycle, from the production of the raw materials right up to disposal or recycling after use.



75%

Material

Carton packs are composed of up to around 75 per cent of pulp fibres, which are obtained from the renewable resource, wood. Added to this are around 21 per cent polymers as liquid and moisture barriers, and 4 per cent aluminium to protect the product from light, oxygen and external odours. In selecting the materials we use, we pay particular attention to ensuring we treat natural resources with care. One of our key requirements is that the raw paper-board is made from wood which is verifiably obtained from controlled sources and responsibly managed forests.



21%



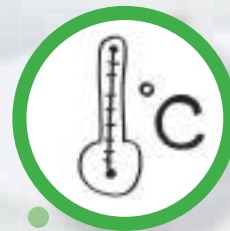
4%

Processing

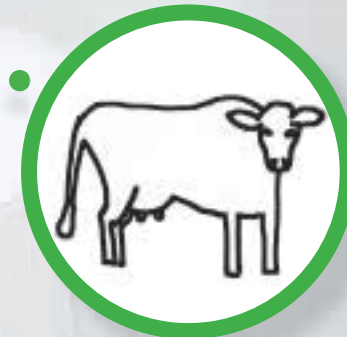
In SIG Combibloc's production plants, more than 22 billion carton sleeves are produced annually. Environmental management systems in accordance with ISO standard 14001 have been established at all SIG Combibloc production sites world-wide, and these enable us to continuously improve our products and production processes in respect of their environmental impact. In addition, since 2009 all our production sites world-wide have been certified in accordance with the criteria of the Forest Stewardship Council® (FSC®) for a continuous chain of custody (CoC) verification.

Product processing

Prior to being filled into carton packs, the untreated milk, juice and food products are processed and sterilised in UHT (ultra heat treatment) facilities at our customers' premises. The equipment used for this is produced by specialist manufacturers of process technology.

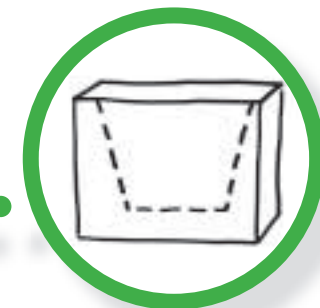


SIG Combibloc has no influence, directly or indirectly, on the UHT life-cycle stage (product processing prior to filling).



Filling

On-site at the premises of our customers, foods and beverages are filled into carton packs on filling machines from SIG Combibloc. The continuous enhancement of the performance of our filling machines also extends to saving on resources – in particular with respect to the consumption of water, power and the hydrogen peroxide that is used to sterilise the formed carton packs before they are filled.



Secondary packaging

The filled carton packs are provided with secure secondary packaging on-site at the premises of our customers, to make them ready for their journey to the retail market and distributors. The machines for secondary and tertiary packaging are supplied by specialist downstream equipment manufacturers.

Distribution and retail

Carton packs are enormously efficient in their transportation and sale logistics. They can be transported and stored in a space-saving manner and without refrigeration. This cuts down on emissions and fossil resource consumption. Carton packs offer clear advantages for retail distribution: they are lightweight, easily stackable, convenient, and ensure that the quality of the food is retained for a prolonged period.



Disposal and recycling

After use, carton packs are ideally suited for all disposal and recycling systems. When processed for thermal energy recovery, they have a high energy content. All material components of the carton packs can be recovered and re-used – they are fully recyclable. SIG Combibloc actively supports the establishment and expansion of national collection and recycling systems.



There are ways and means of continually getting better.

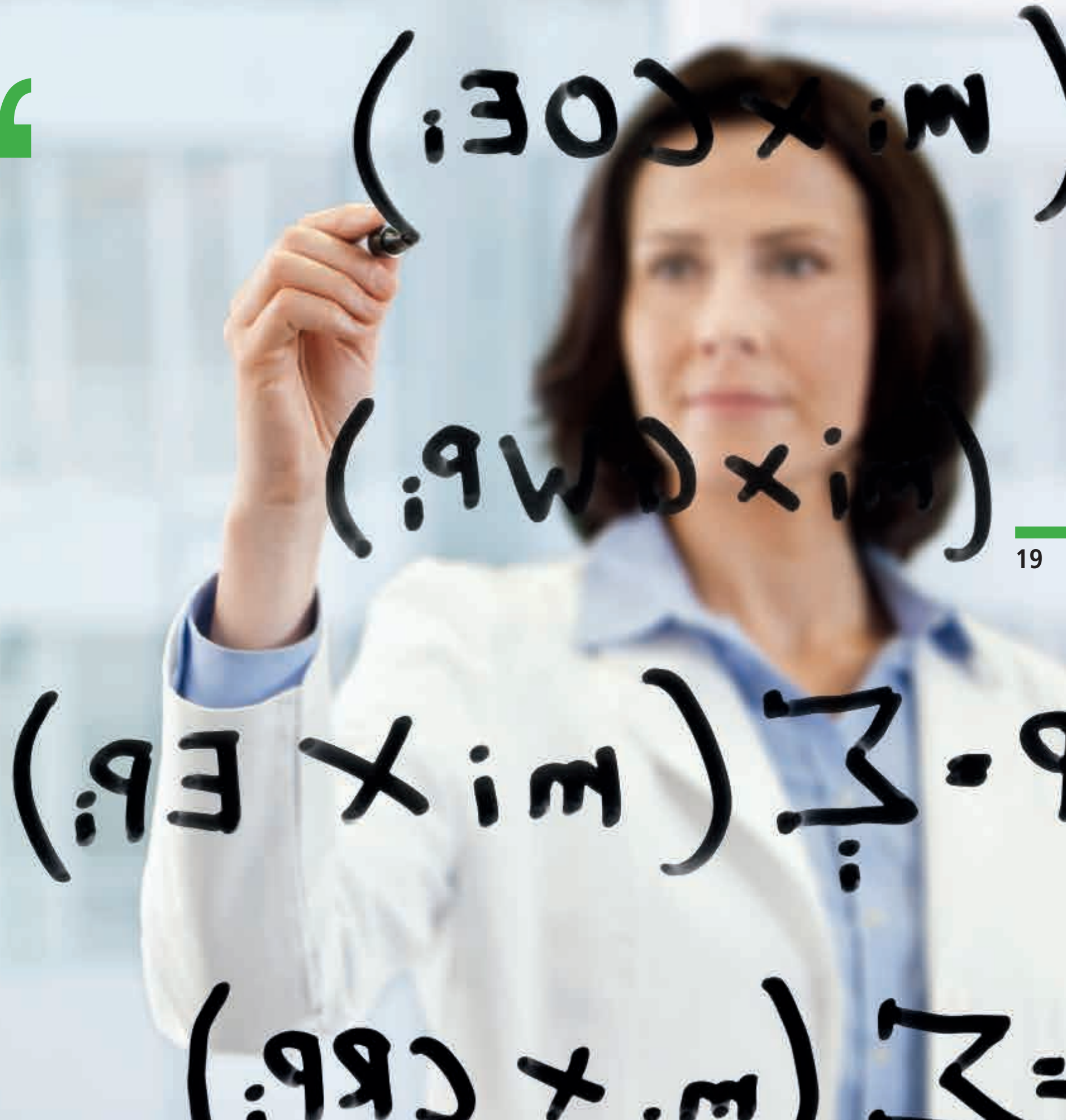


Life-cycle assessments: an aid to optimisation

Throughout its life cycle, every product has verifiable environmental impacts, and packaging is no exception. Life-cycle assessments that are scientifically well-founded and are carried out by independent institutes in accordance with internationally binding standards (ISO 14040ff) produce reliable, scientifically verified facts that enable us to make statements on possible environmental impacts – and generate important insights for potential improvements.

Entire product life-cycle

A life-cycle assessment evaluates the entire life-cycle of a product. From the production of the raw materials needed, to the manufacture of the product, right up to its disposal or recycling, the environmental impacts are recorded and evaluated. The results of studies of this kind enable us to identify where we can most effectively take steps, within the life-cycle stages of the carton pack that we can directly or indirectly influence, to further minimise the environmental impact of our company's actions.



If you want to be easy on the environment, you must be unsparing with your analyses.

fossil resources +
recycling +
eutrophication and
acidification of soil
and watercourses +
filling process +
distribution +
use of nature +
transportation +
primary energy +
climate change +
sleeve production +
CO₂ emissions +
particulate matter
emissions +

life-cycle assessment T

Life-cycle assessments have also made a significant contribution to creating clarity among the general public with respect to the environmental benefits of carton packs for long-life foods.

Life-cycle assessments have made us aware of which aspects in the product life-cycle of the carton pack have the greatest relevance for the key environmental impact categories. It is specifically in these life-cycle stages, within our sphere of influence, that we are taking action to further minimise the carbon footprint of the carton pack.

We have now carried out and evaluated life-cycle assessments for all market segments for which we offer aseptic carton packs: non-carbonated soft drinks, liquid dairy, and food products. Using the findings of these life-cycle assessments, we are able to clearly define the environmental profile of our products. This makes it possible for us to press ahead with our product development projects including where they relate to sustainability issues, and to fulfil our product responsibility in terms of customer and market requirements. Market analyses and customer needs are the main drivers of our product development efforts. We also incorporate into our product development the results of all life-cycle assessments carried out.

2009: Europe-wide life-cycle assessment for long-life food products

In this life-cycle assessment for packaging solutions for long-life foods (such as soups, sauces and tomato products), the environmental impacts of food metal cans, glass jars, pouches and carton packs were investigated. The study, carried out in 2009 by the Institute for Energy and Environmental Research (IFEU), proves that in terms of fossil resource consumption and CO₂ emission, carton packs generate up to 60 per cent less environmental loading than the other packaging solutions considered in the study.

2011: Europe-wide life-cycle assessment for non-carbonated soft drink packaging

In this life-cycle assessment of disposable PET and glass bottles and carton packs for non-carbonated soft drinks, it was shown that in all three market-relevant format sizes – compared to the commercially available packaging alternatives – carton packs have an environmental profile that has significant benefits particularly in terms of CO₂ performance, consumption of fossil resources and use of primary energy. The study, conducted by the IFEU, sees the renewability of the principal raw material as well as the resource-efficient use of materials as being the key contributing factors in the carton's favourable environmental profile.

2012: Europe-wide life-cycle assessment for UHT milk packaging

This life-cycle assessment carried out by the IFEU Institute has shown that, compared to the commercially available packaging alternatives such as disposable HDPE and PET bottles, carton packs for UHT milk also have a very positive environmental profile – particularly in terms of CO₂ performance, use of fossil resources and consumption of primary energy. Here too, the independently verified study sees the renewability of the main raw material used and the resource-efficient use of materials as key contributing factors in the carton's strong results.

We're taking action precisely where climate and resources will most benefit.

The results of the life-cycle assessment for food packaging have reconfirmed our awareness of the aspects that have the greatest environmental relevance in the product life-cycle of the carton pack. So we are looking in particular at the effects of the carton pack in those environmental impact categories that are among the key issues globally: the production of greenhouse gases, the consumption of fossil resources and the responsible management of the sources of renewable raw materials.

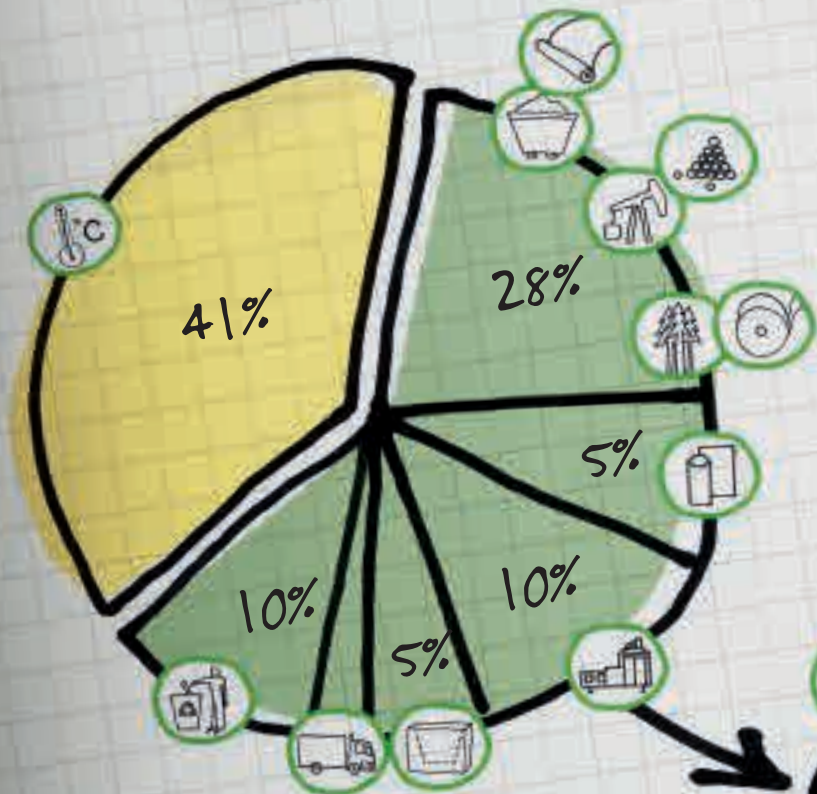
The findings of the life-cycle assessment for food packaging actually confirm for example that within the life-cycle stages that can be influenced directly or indirectly by us, it is the extraction and refining of the three material components of the carton pack – raw paperboard, polymers and aluminium foil – that make the biggest contribution to the overall output of greenhouse gases, at around 48 per cent. Moreover, at about 67 per cent, throughout the entire product life-cycle, the extraction and refining of the material components also has the biggest share in fossil resource consumption. In other words, almost half the CO₂ emissions and two thirds of the fossil resource consumption associated with the entire life cycle of a carton pack have already been generated by the time the raw materials for manufacturing the carton packs are delivered to our production plants. And, compared to the raw

paperboard, it is mainly the polymers and the aluminium that produce the greatest share of greenhouse gases and consume the greatest quantity of fossil resources – and this is before they even reach our production plants. By way of illustration: aluminium makes up 8 per cent of the total weight of a food product carton. However, aluminium generates 50 per cent of the CO₂ emitted in the extraction and refining of the three material components.



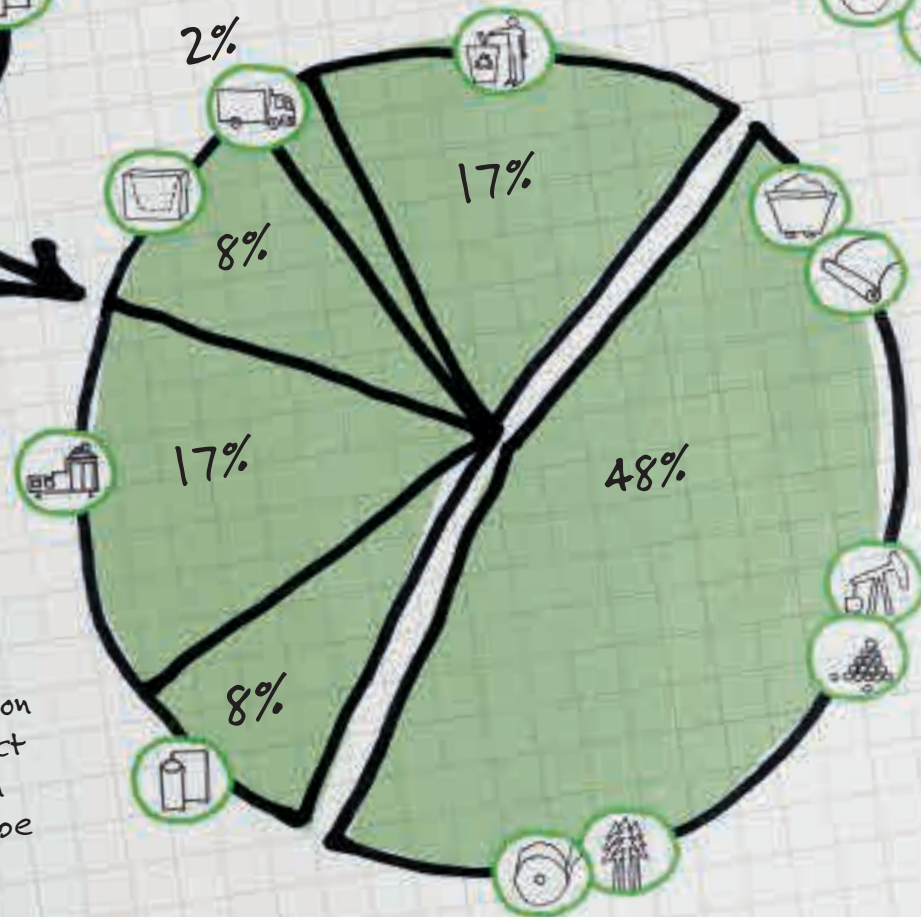
Within the life-cycle stages, the **material is the key factor** over which we can have a direct influence.

CO₂ emissions

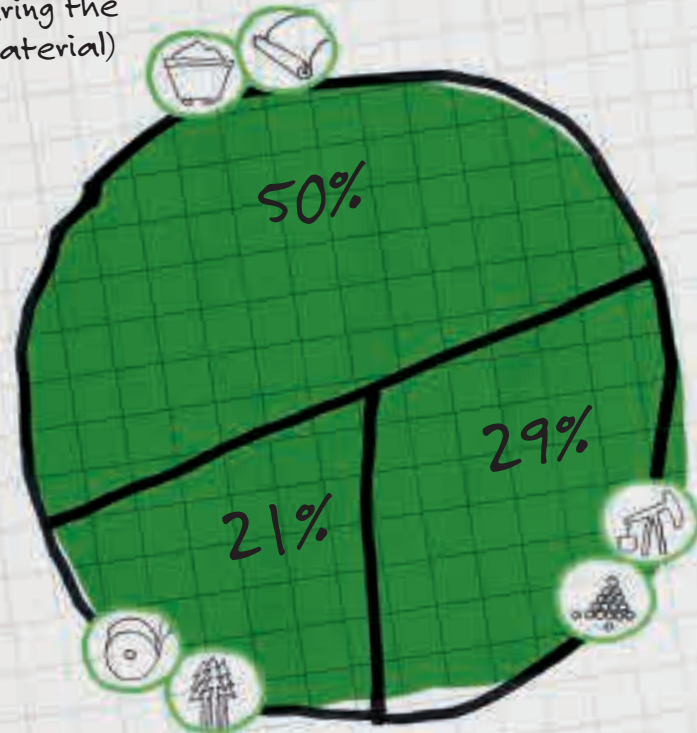


Share of the individual life-cycle stages of a carton pack in the total CO₂ emissions

Share of the individual life-cycle stages of a carton pack in the total CO₂ emissions without inclusion of the UHT life-cycle stage (product processing prior to filling), which can neither directly nor indirectly be influenced by SIG Combibloc

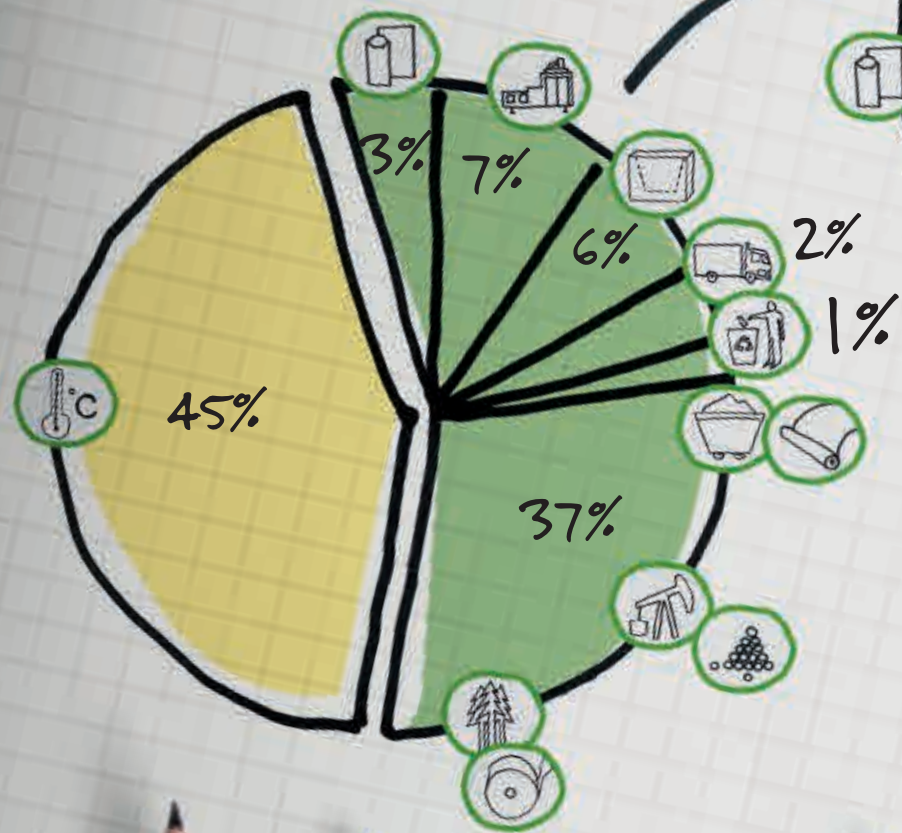


Share of the three individual materials in the total CO₂ emissions produced during the life-cycle stage 'Material' (extraction and refining of the raw materials for manufacturing the packaging material)

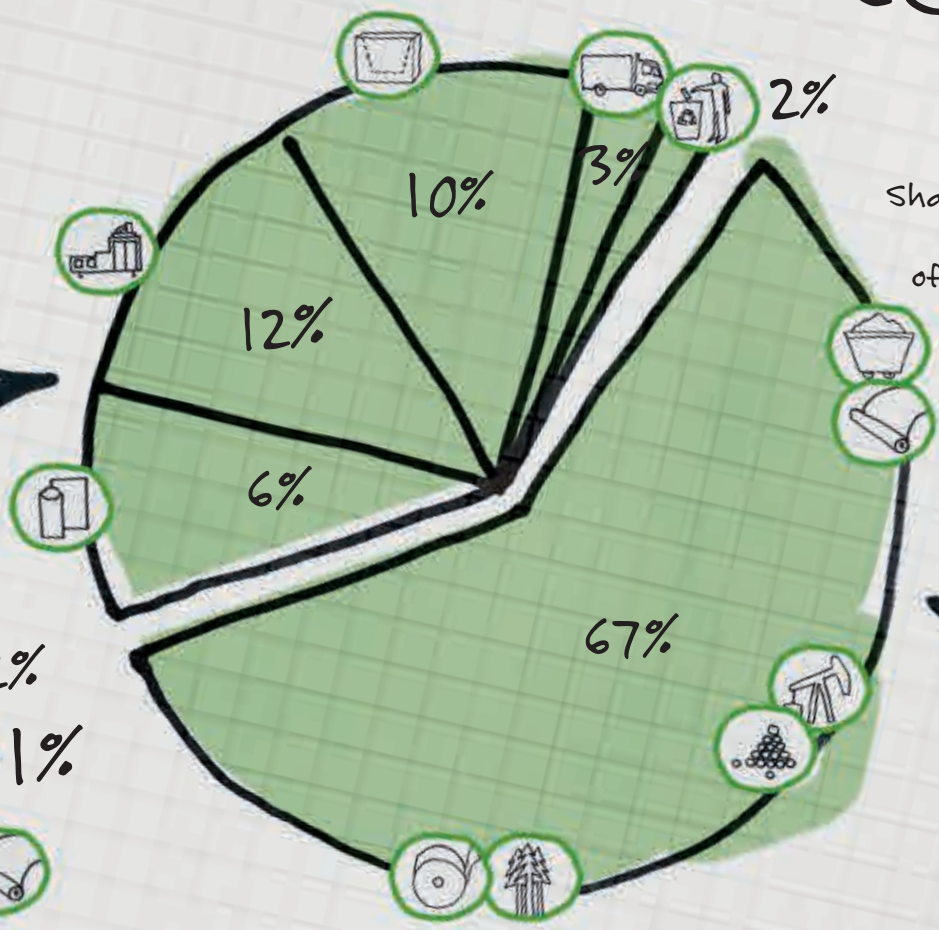


Consumption of fossil resources

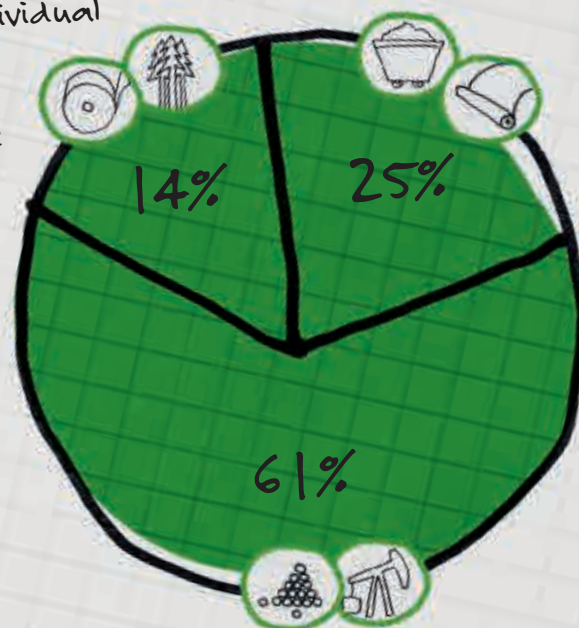
Share of the individual life-cycle stages of a carton pack in the total consumption of fossil resources



Share of the individual life-cycle stages of a carton pack in the total consumption of fossil resources without inclusion of the VHT life-cycle stage (product processing prior to filling), which can neither directly nor indirectly be influenced by SIG Combibloc



Share of the three individual materials in the total fossil resource consumption during the life-cycle stage 'Material' (extraction and refining of the raw materials for manufacturing the packaging material)



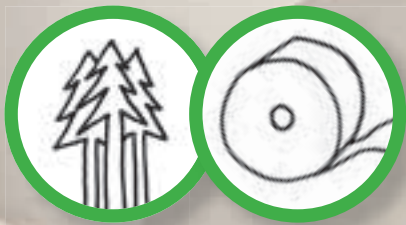


“
For the sake of the environment:
making enhancements precisely
where it matters.”

When considering the product life-cycle of a carton pack, each individual stage is important to us. The results of scientific, critically audited life-cycle assessments confirm that within the stages on which we are able to have a direct and indirect influence, it is first and foremost the material that substantially affects the environmental profile of a packaging in terms of fossil resource consumption and CO₂ emissions. The key factors that decisively impact on the environmental performance are the type of material and the overall weight. In relation to fossil resource consumption and CO₂ emissions, the crucial factor is the extent to which fossil resources or renewable resources are processed to make the packaging.

We are therefore looking very carefully at the raw materials with which we work. It is here that we have the most effective opportunity to contribute to saving the environment. Additionally, we are taking steps throughout the entire product life-cycle to identify further environmental goals, determine appropriate actions, and implement them consistently.

The following examination of the product life-cycle of a carton pack uses an appraisal covering the period 1 January 2009 to 30 June 2012 to show where we currently stand. Here, we present what we are going to do over the next five years to reduce the ecological footprint of our products.



On the right path.

The results of the life-cycle assessment for food packaging confirm that it is first and foremost the material that substantially affects the environmental profile of a packaging in terms of fossil resource consumption and CO₂ emissions.

Within the life-cycle stages that can be directly or indirectly influenced by us, it is the extraction and refining of the three material components of the carton – raw paperboard, polymers and aluminium foil – that make the biggest contribution to the overall output of CO₂, at around 48 per cent. Moreover, at about 67 per cent, throughout the entire product life-cycle, the production and extraction and refining components also has the biggest share in fossil resource consumption. Here, compared to polymers (61 per cent) and aluminium (25 per cent), only a small share – 14 per cent – of fossil resource consumption during the 'Material' life-cycle stage is attributed to the raw paperboard.

And when it comes to the share in the CO₂ emissions generated by this life-cycle stage, at 21 per cent the raw paperboard still lags behind the polymers (29 per cent) and the aluminium (50 per cent). And this is despite the fact that raw paperboard makes up around 75 per cent of the weight of a carton pack. We aim to increase as far as possible the fraction of this renewable, regenerating raw material in the composition of our packaging material.

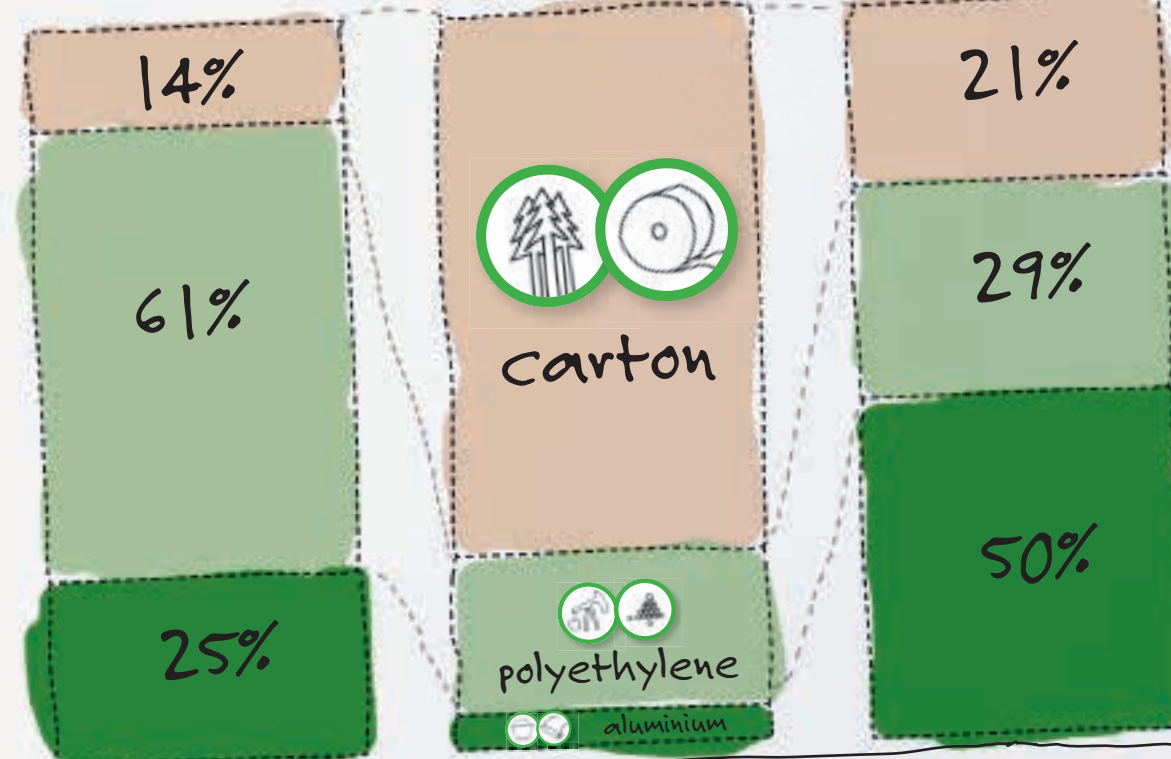


Weight distribution and environmental impact of the raw materials

Percentage share in fossil resource consumption

Weight distribution in carton pack

Percentage share in CO₂ emissions



Percentage share of the three individual materials in the total consumption of fossil resources in the 'Material' life-cycle stage (Extraction and refining of the raw materials for manufacturing the packaging material)

Percentage share of the three individual materials in the total CO₂ emissions in the 'Material' life-cycle stage (Extraction and refining of the raw materials for manufacturing the packaging material)

We aim to increase as far as possible the fraction of **renewable, regenerating raw material** in the composition of our carton packs.



Climate protection that's in the nature of things.

Carton packs are composed up to around 75 per cent of wood, a renewable resource. If forests are managed properly and responsibly, this natural raw material can be a virtually inexhaustible resource. Then there is the added benefit that wood is extremely carbon-neutral and therefore does not alter the CO₂ balance in the atmosphere.

In this respect, by basing our carton packs on the renewable, CO₂-neutral main raw material, wood, we have in the truest sense of the term 'by its nature' a starting position that is beneficial for the climate. In selecting the raw materials we use, we demand the best – from ourselves, and from the people who supply our raw paperboard.

We know that managing forests responsibly and maintaining their environmental, social and economic value on a sustained basis is a global challenge that calls for active, transnational commitment over the long-term. In view of this fact, we work closely with the FSC® (Forest Stewardship Council®), the WWF (World Wide Fund for Nature) and also the GFTN (Global Forest and Trade Network), which campaign world-wide for responsible and effective forest management.

Carton packs are composed up to around **75 per cent of wood, a renewable resource.**



We've made something very important: the decision to have a certified chain of custody verification.

We place great emphasis on ensuring that only wood fibres originating from legal and accepted sources are used to make our beverage cartons, guaranteeing full traceability all the way back to the forests of origin.

We require all our suppliers of raw paperboard to have their production sites certified in accordance with the internationally binding chain of custody (CoC) criteria of the Forest Stewardship Council® (FSC®) for a continuous chain of custody verification. The FSC® is an international, independent, not-for-profit organisation that campaigns for responsible forest management. The organisation's objective is to promote world-wide the responsible, effective use of forests and forest resources.

(You can find more on this topic on pages 62-65.)

In 2009, we had all our own production plants and sales organisations CoC-certified to the FSC® standards. Even our production plant in Curitiba, Brazil, which opened in 2011, is now certified. Having achieved this milestone, we can now offer our customers all over the world carton packs that are permitted to carry an FSC® label. In Europe, the first SIG Combibloc beverage cartons with the FSC® label went on sale in 2009. FSC®-labelled carton packs from SIG Combibloc are now also available in a number of other regions and countries like for example in Asia, Brazil, North America and South Africa.



At the end of 2009, **SIG Combibloc** became the **first manufacturer** of carton packs to be certified at all its production sites **world-wide** in accordance with the criteria of the **Forest Stewardship Council® (FSC®)** for a continuous product chain of custody (CoC) **verification**.

With the FSC® logo on the beverage cartons, consumers can be certain that appropriate quantities of wood originating from FSC®-certified, well-managed forestry were used to manufacture the raw paperboard. The criteria of the FSC® are accepted and supported by all the major international environmental protection organisations – not least for this reason, these guidelines are for us the clearly preferred standard for responsibly managed forestry, controlled source and substantiated traceability of wood products.

We are making sure that as long as availability remains limited, in addition to already certified raw paperboard we only use raw paperboard from other controlled sources. This ensures that the use of wood from illegal or genetically modified sources, and from protected forests, is avoided.

We have set ourselves the ambitious goal of increasing the percentage of our carton packs that are FSC®-labelled to 40 per cent by 2015. At the end of June 2012, the proportion of FSC®-labelled carton packs from SIG Combibloc had already reached 16 per cent.

We are committed to working towards our ambitious **goal** of **increasing** the percentage of our carton packs that are **FSC®-labelled to 40 per cent by 2015**.



MATERIAL: WOOD

Always striving for more. And sometimes less is more.

Our own requirement – that we obtain the main raw material for our carton packs through sustainable practices and in the best quality – goes hand in hand with continuous improvements to and reductions in the use of materials. That means we are extracting the best from the resources we use. For instance, working with our raw paperboard suppliers, we have reduced the weight of the raw paperboard by more than 23 per cent since the launch of the first aseptic carton pack.

Similarly, as a result of joint initiatives, the paper mills where our suppliers produce the raw paperboard we use to make our carton packs are now predominantly using renewable energy forms for production. Even the wood by-products generated in the paper manufacturing process – primarily bark, resin and lignin – are used for energy generation, producing CO₂-neutral bio-energy at the production sites of the raw paperboard manufacturers. Depending on the site, the energy obtained in this way can cover between 70 and 90 per cent of the energy demand of the entire paperboard factory.

Working together with our raw paperboard suppliers, we have **reduced the weight of the raw paperboard by more than 23 per cent** since the launch of the first aseptic carton pack.

Depending on the site, the energy from bark, resin and lignin can cover **between 70 and 90 per cent** of the energy demand of the entire paperboard factory.



We're making a weighty contribution. Because we're continuing to reduce weight.

When working on new product developments and making enhancements to existing products, we make it a specific priority to continue to reduce the proportion of non-renewable raw materials we use – for the sake of the environment.

Example of closures:

Over the past few years, we have succeeded in making significant reductions in the weight of, and thus the quantity of material used in, our closures. The first screw cap on our aseptic beverage cartons weighed 4.9 grammes. In 2010, we launched a screw cap that weighs just 1.9 grammes.

Example of polymers:

In a variety of projects, we are working intensively on optimising the polymer content in our carton packs. This can involve, for instance, new combinations of different types of polymers, which allow us to reduce the thickness of the layers and thus the overall weight of the carton packs. This in turn will have a favourable impact on the overall environmental performance of the carton pack. We are also keeping an eye on the development of (and the continuing debate about) biopolymers. We are giving careful consideration to the use of such biopolymers, and are investigating the extent to which polymers manufactured on the basis of crude oil are replaceable with bio-based synthetic materials. In carrying out these analyses, we are working on internal and external research projects, and collaborating closely with academic and scientific institutes and trade associations.

We have reduced the weight of our screw caps from **4.9 g** to the present **1.9 g**.



Since the launch of our first carton pack, we have **reduced** the material fraction of **aluminium by 30 per cent**.

Example of aluminium:

The aluminium fraction in our carton packs is very small – in a 1-litre beverage carton, for instance, the aluminium layer is just six thousandths of a millimetre thick – seven times thinner than a human hair. And every reduction in the aluminium content is another step towards protecting our climate. Because while the weight component of the aluminium layer is multiple times less than that of the paperboard, across the entire product life-cycle of the carton pack, the share of the aluminium in the CO₂ emissions is significantly higher than the share of the paperboard. Since the launch of our first aseptic carton, we have reduced the material fraction of aluminium by 30 per cent. With the aim of reducing to an absolute minimum the fraction of non-renewable raw materials used in our carton packs, in 2010 we launched *combibloc EcoPlus* – an aseptic carton pack that contains no aluminium at all.

Example of production waste:

The systematic reduction of production waste in our production plants also helps to reduce material usage. Reducing waste means cutting down on all raw materials. In the production process, therefore, our principle is to avoid wastage as far as possible. Technical and organisational enhancements continue to bring us closer to this goal. As well as this, we have set up special recovery facilities for waste material. Polymer off-cuts, for instance, are regranulated directly during the production process and re-used.





When caring for the environment is part of the process.

At SIG Combibloc's production plants the three raw materials raw paperboard, aluminium foil and polymers are further processed, firstly into coated paperboard and then into carton sleeves. The findings of the life-cycle assessment for food packaging confirm that, within the life-cycle stages of the carton pack over which we have some influence, the further processing has an 8 per cent share in the overall greenhouse gas output and a 6 per cent share in fossil resource consumption.

For us, working to continuously ameliorate the environmental impacts of our production processes is simply a matter of course. Our objective is to reduce the consumption of resources and energy, the waste accumulation and the production-related CO₂ emissions, and thus to further optimise the overall environmental profile.

Our production plants world-wide are linked through global environmental management practices in accordance with ISO 14001 and the continuous improvement processes associated with that standard. Through constant exchange, we identify and actively develop what are known as 'best practice' projects, agree global environmental targets and work on implementing appropriate measures to achieve these.

Our **production plants world-wide are linked** through global **environmental management** practices in accordance with **ISO 14001** and the continuous improvement processes associated with that standard.



Production is running at full speed. But we're still focusing on reduction.

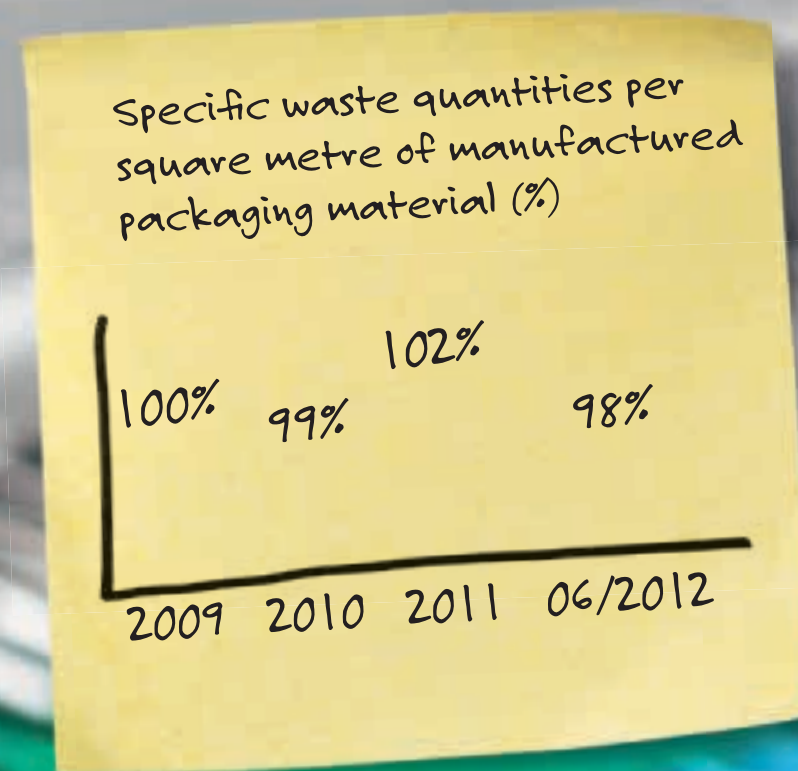
The production volume of our packaging material – measured in square metres of packaging manufactured – increased by around 16 per cent in the period from 2009 to 2011, and looks set to continue rising. This increase is due above all to the positive growth in our non-European markets.

But we still have our sights set on systematic reduction – for instance, cutting the level of specific waste accumulation, which we reduced by 2 per cent within the manufacturing process from 1 January to 30 June 2012. The main contributors to this reduction have been technical and organisational enhancements: production waste has been reduced, manufacturing processes improved and production efficiency increased. In the overall performance analysis, this also has a positive impact on the use of raw materials in terms of a lower consumption rate. The performance figure for the specific waste accumulation in the production plants refers to one square metre of manufactured packaging material in each case.

Since 2009, we have set in motion a number of projects to achieve our target of reducing waste accumulation by 25 per cent by 2015. This includes, among other measures, improving the sorting system. Above and beyond waste avoidance, we have made a commitment to the effective management, disposal and recycling of waste. To this end, we have established and further developed in-house logistics systems for the collection and separation of waste items. We are also working with certified external waste management companies which guarantee optimal waste processing.

Using a waste management chain that begins with separate, mono-material collection, 98 per cent of inhouse waste can now be fed into recycling and recovery processes. Cardboard packaging, paper, plastics, metals, glass and organic waste are fully available for recycling. Just two per cent of the total waste quantity is disposed of as problematic or hazardous materials. This includes distillation residues, laser powder fluid, dyestuffs, oil emulsion residues, and electrical and electronic scrap.

As the manufacturing process in our packaging material plants generates no production-specific waste water, it does not pollute the public water network. The water requirement in our production facilities is covered exclusively by closed recirculation systems. Accordingly, waste water produced during the manufacture of the packaging material – in comparison to other industries – makes no contribution to the ecological footprint.



Our goal is to reduce the specific waste quantity by **25 per cent by 2015!** (reference value 2009)



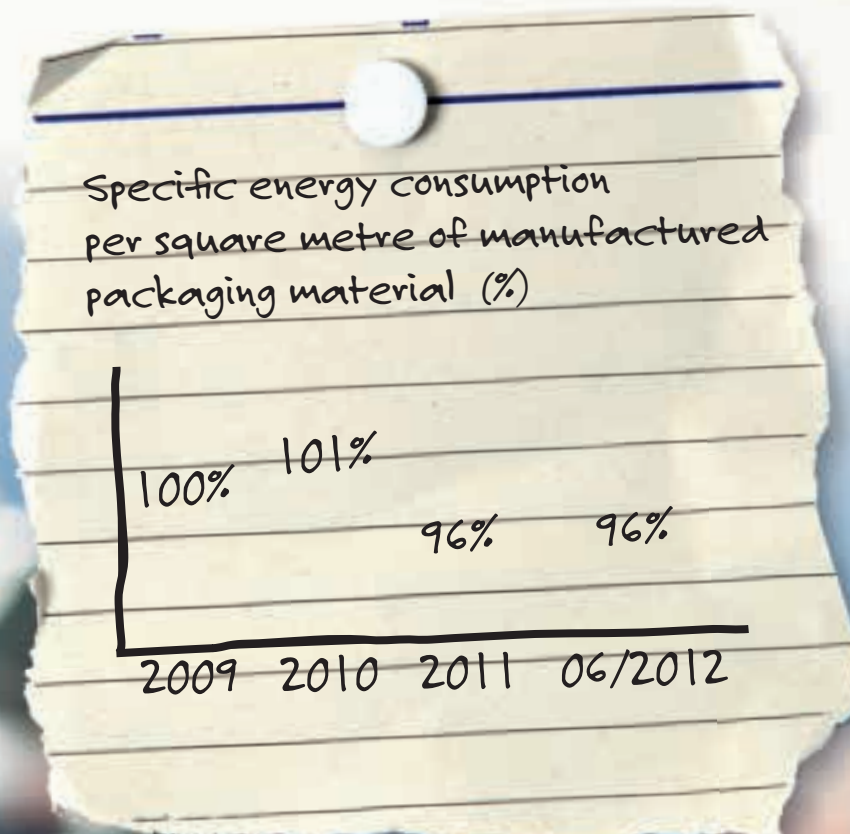
Putting our energy into using less energy, and generating less CO₂.

Our CO₂ emissions within the production plants are mainly associated with the specific consumption of electricity. Overall, a lower level of energy consumption therefore has a positive effect on the specific CO₂ emission rate. Other directly pertinent causes of CO₂ emissions are exhaust air purification equipment used in the printing process, and gas-powered heating systems.

In the period from 1 January 2009 to 30 June 2012, we were able to reduce CO₂ emissions by a total of 5 per cent. New energy contracts with suppliers in Europe have also made a valuable contribution to CO₂ reduction. In order to reach the global target of a 40% reduction in CO₂ emissions by 2015, we are working on measures to improve infrastructure, in our buildings and cooling systems for instance, and our processes.

SIG Combibloc's energy requirement is currently divided among electricity (78 per cent of total consumption), natural gas (19 per cent) and liquid petroleum gas (3 per cent). Electricity is required primarily for the manufacturing process. Around half of the electricity consumed is required for melting polymers, to make them ready for coating the raw paperboard. For lamination with aluminium, in contrast, very little energy is used.

We were able to reduce energy consumption by 4 per cent in the period from 1 January 2009 to 30 June 2012. Decisive factors in this reduction included process enhancements and a significant increase in productivity. Other measures also incorporate external energy experts. Specific major projects are contemplated in our investment planning.



CO₂ emissions
2010
↓ -40%
2015

At all our production plants world-wide, we are putting a particular focus on **CO₂ emissions**, which we aim to reduce **by 40 per cent by 2015**. (reference value 2009)

By 2015, we aim to **reduce specific energy consumption by 35 per cent!** (reference value 2009)



Anything but pie in the sky: fast machines with low consumption.

The life-cycle assessment for food packaging shows that within the life-cycle stages on which we are able to have a direct and indirect influence, the process of filling foods has a 17 per cent share in CO₂ emissions, and a 12 per cent share in the use of fossil resources.

Filling machines: technical progress for the environment as well.

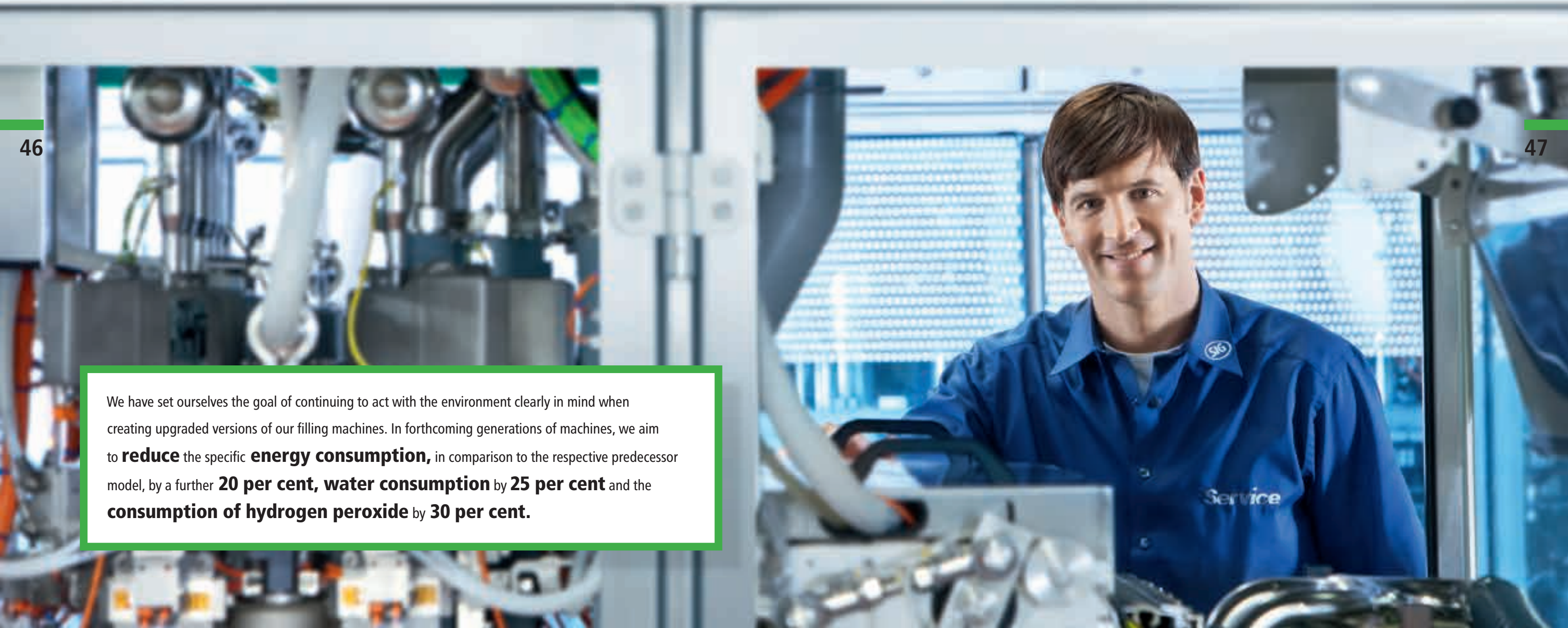
Even with our new filling machines for food and drinks, we still have our eye firmly on our ecological footprint. In terms of the need to design efficient filling machine

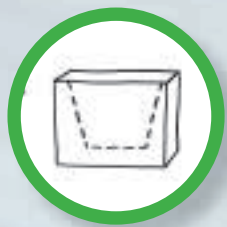
systems that meet the requirements of food and beverage manufacturers, the environmental profile of new generations of filling machines is therefore a key consideration. In all new designs, it is our aim to substantially reduce energy and water consumption, and the use of hydrogen peroxide.

An example of this is the new CFA 124 and CFA 724 high-speed filling machines. These machines can fill 24,000 packages per hour. Compared to the preceding models, for the corresponding formats these machines require

30 per cent less energy, 25 per cent less water, 54 per cent less compressed air and 18 per cent less hydrogen peroxide per unit produced. The wastage rate of the new filling machines is under 0.5 per cent.

We have set ourselves the goal of continuing to act with the environment clearly in mind when creating upgraded versions of our filling machines. In forthcoming generations of machines, we aim to **reduce** the specific **energy consumption**, in comparison to the respective predecessor model, by a further **20 per cent**, **water consumption** by **25 per cent** and the **consumption of hydrogen peroxide** by **30 per cent**.





Ecologically advantageous packaging for ecologically advantageous carton packs.

After filling, the carton packs are provided with secondary packaging at our customers' premises and so prepared for their journey to distributors and consumers. According to the results of the life-cycle assessment for food packaging, in the product life-cycle of a carton pack the share

of the secondary and tertiary packaging in the total CO₂ emissions is 8 per cent. This life-cycle stage has a 10 per cent share in the total fossil resource consumption.

The machines for secondary and tertiary packaging are developed and assembled by specialised downstream equipment manufacturers. However, the logistical advantages offered by carton packs have a direct bearing on the design of the secondary packaging required. In particular, thanks to the light weight and the shape of the carton packs, and their stability, the secondary packaging can be kept to a minimum, and therefore precious resources are not wasted. We work closely with downstream equipment manufacturers to ensure the secondary and tertiary packaging for our carton packs is the best it can be.

With the design of our carton packs, we are able to influence the environmental impact of secondary packaging indirectly. We work closely with downstream equipment manufacturers to harmonise the secondary and tertiary packaging with our carton packs, including in terms of environmental considerations, and to continue to enhance these packaging options.

We work closely together with downstream equipment manufacturers to **harmonise** secondary and tertiary packaging with our carton packs, including in terms of **environmental considerations**, and to continue to **enhance** these packaging options.



It always gets very cramped. And that's the huge benefit.

Carton packs are lightweight, easily stackable, and therefore very space-saving. Even when filled they can be transported and stored without refrigeration – making them enormously efficient in terms of transportation and distribution logistics. Because they are supplied to the filling company as flat carton sleeves, the shipping volume of a lorry can be optimally used. And even after they have been filled, a lorry carrying carton packs on the way to the distributor is transporting around 95 per cent content and just 5 per cent packaging.

These transportation advantages cut emissions and reduce the use of fossil resources, particularly in comparison to the noxious emissions generated by the transportation of heavy and less easily stackable forms of packaging. In the overall analysis of the product life-cycle stages upon which we can have a direct or indirect influence, the distribution of the carton packs has a share of just 2 per cent in the CO₂ emissions, and a share of only 3 per cent in fossil resource consumption.

Even after they have been filled, **a lorry carrying** carton packs on the way to the distributor is transporting around **95 per cent content** and just **5 per cent packaging**.





Life goes on...

Our commitment to conserving valuable resources goes far beyond the design and manufacture of our products. For instance, we see recycling as an important contribution to keeping valuable material resources within the economic cycle. After the carton packs have been emptied, all the materials processed to make the cardboard composite can be recovered and recycled.

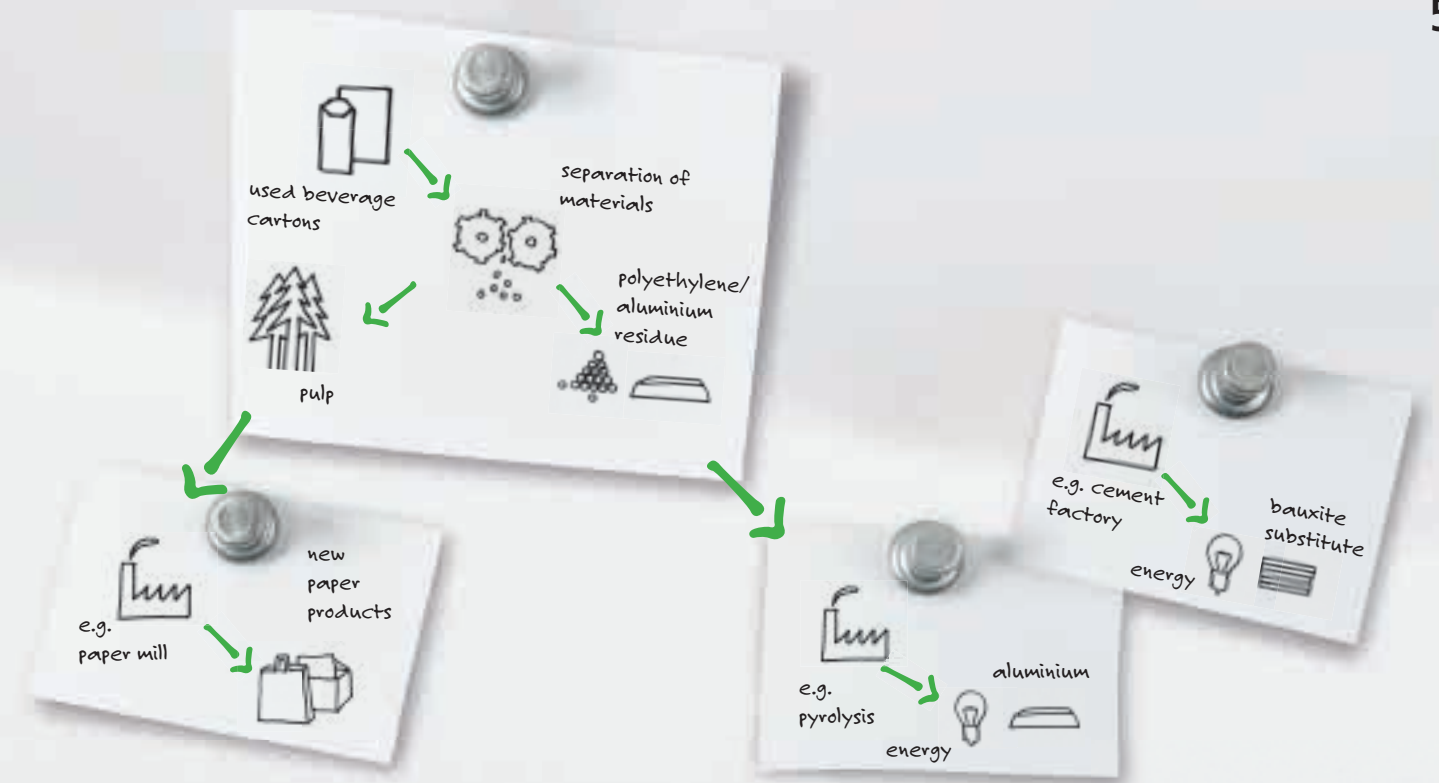
Promoting recycling is part of SIG Combibloc's environmental sustainability strategy. This strategy includes actively supporting national collection and recycling systems, and ensuring sufficient recycling capacities exist for used carton packs. Empty carton packs are compatible with all local and national recycling and waste management options, whether these involve material recycling or combustion with energy recovery.

To recycle carton packaging, at paper mills the long, stable wood pulp fibres are first recovered using a water bath, and these are then used as the basic raw material for paper products such as folding boxes, core boards, corrugated cardboard and so on. Recycled beverage cartons are often also used in manufacturing the secondary packaging ('trays') for filled beverage cartons.

For the recovery of the remaining compound of polymers and aluminium, there are two established technologies available. Firstly, the materials can be used as aggregates in the cement industry.

In this process, polymers replace fossil fuel resources, and aluminium is substituted for the essential primary raw material bauxite, which is used as a hardening agent for the cement.

In the alternative pyrolysis process, polymers are used instead of fossil fuel energy, while the aluminium is recovered as a mono-fraction and used to manufacture new products.





...right from the start.

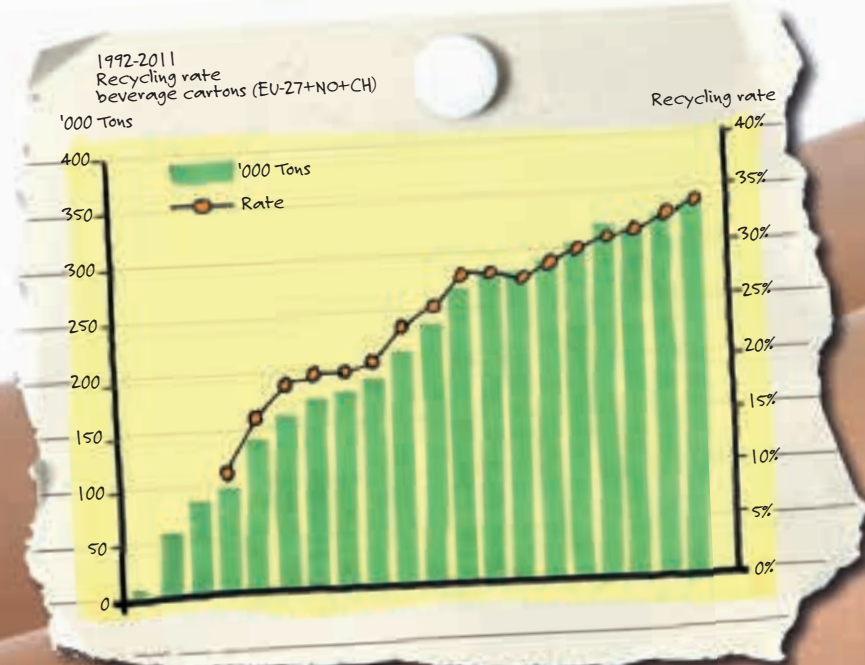
In many countries, the recycling of beverage cartons is established practice while in other parts of the world, such as Thailand and Brazil, dedicated recycling projects are being developed.

In Europe (the EU 27 + Norway and Switzerland), the recycling of beverage cartons has increased steadily over the past few years, to about 365,000 tonnes in 2011. This means that in Europe 37 per cent of all carton packs were recycled. In some countries, such as Belgium and Germany, the recycling rate is actually more than 70 per cent. If recycling and energy recovery are considered together, Europe is reaching around 700,000 tonnes (a utilization rate of 68 per cent). In Europe, a clear, long-term growth trend in the recycling of beverage cartons has been evident since 1992. At that time, just 6,000 tonnes were recycled.

Considered on a country-by-country basis, the recycling rates for beverage cartons in Europe vary widely. Variations of this kind have also been incorporated into the life-cycle assessment on packaging solutions for long-life foods that we commissioned.

Based on an average recycling value in the European countries, the results were subjected to a detailed sensitivity analysis in all the environmental assessment categories. This analysis confirmed that, even with varying rates of recycling for carton packs and with recycling rates for food packaging forms made from glass and food metal increasing, the carton pack performs better than the packaging alternatives in almost all categories.

The reason for this is the considerably lower level of fossil resource consumption, which is due to the composite structure of the lightweight carton packs. These results make it clear that: Considered throughout the entire product life-cycle, only recycling can make many types of packaging environmentally acceptable; however, recycling is a valuable extra, when it comes to the environmental performance analysis of carton packs.



Due to their high content of renewable raw materials and the resource efficient, lightweight overall concept of the composite, **beverage cartons are ecologically advantageous by nature.**



Focal points of our commitment to the environment.



**Life-cycle assessments prove:
carton packs show favourable
results in all market segments**

Opting to package products in carton packs offers food manufacturers significant advantages on the path towards improving their environmental performance. Carton packs have an excellent environmental profile. This has been confirmed by life-cycle assessments conducted on the basis of scientific realities.

SIG Combibloc has commissioned these life-cycle assessments in order to obtain valid facts on the environmental impacts that carton packs have in comparison to other packaging solutions.

In 2009, therefore, the Institute for Energy and Environmental Research (IFEU) carried out the first Europe-wide life-cycle assessment for food product packaging, on behalf of SIG Combibloc; in 2011, this was followed by a

life-cycle assessment for packaging for non carbonated soft drinks, and in 2012 a further life-cycle assessment for different types of UHT milk packaging.

With the results of these scientific life-cycle assessments, we now have a valid data set that includes assessments of the environmental impact of carton packs compared to packaging alternatives – in every market segment for which we offer packaging solutions. In all studies, it is shown that compared to other packaging solutions, carton packs can reduce CO₂ emissions, and save on primary energy and fossil resources. The main reason for the carton's first-rate environmental performance is its high content of wood, a bio-based and renewable resource, as its main raw material.

Overview LCA results
beverage carton vs. PET bottle and HDPE bottle

	PET	HDPE	
Fossil resource consumption (in kg crude oil equivalent)*	🟢 -57%	🟢 -56%	Resource-related impact categories
Non-renewable primary energy (in giga joule)*	🟢 -50%	🟢 -46%	
Total primary energy consumption (in giga joule)*	🟢 -36%	🟢 -30%	
Use of nature (in m ²)*	🟡 +95%	🟡 +95%	
Climate change (in kg CO ₂ equivalent)*	🟢 -45%	🟢 -34%	Emission-related impact categories
Acidification (in g SO ₂ equivalent)*	🟢 -43%	🟢 -14%	
Eutrophication (in g PO ₄ equivalent)*	🟢 -16%	🟡 +22%	
Human toxicity PM₁₀ (in g PM ₁₀ equivalent)*	🟢 -39%	🟡 -9%	

🟢 carton significantly better¹ * per packaging required for 1,000 L UHT milk
 🟡 no significant difference¹
 🟠 carton significantly „worse“¹
¹ at a 10% significance level

Example of UHT milk:

The life-cycle assessment showed that SIG Combibloc carton packs for UHT milk generate significantly fewer CO₂ emissions and use up considerably fewer fossil resources and primary energy across their product life-cycle than the HDPE and PET milk packaging solutions looked at in the study.

Based on the results of this life-cycle assessment, the IFEU Institute recommends the carton to business and consumers as a packaging solution whenever environmental considerations are a factor in decision-making.

Overview LCA results
beverage carton vs. can vs. glass and vs. pouch

	carton vs. can	carton vs. glass	carton vs. pouch	
Fossil resource consumption (in kg crude oil equivalent)*	🟢 -41%	🟢 -60%	🟢 -45%	Resource-related impact categories
Non-renewable primary energy (in giga joule)*	🟢 -39%	🟢 -55%	🟢 -35%	
Total primary energy consumption (in giga joule)*	🟢 -28%	🟢 -45%	🟢 -26%	
Use of nature (in m ²)*	🟡 +263%	🟡 +254%	🟡 +145%	
Climate change (in kg CO ₂ equivalent)*	🟢 -54%	🟢 -60%	🟢 -36%	Emission-related impact categories
Acidification (in g SO ₂ equivalent)*	🟢 -66%	🟢 -68%	🟢 -35%	
Eutrophication (in g PO ₄ equivalent)*	🟢 -55%	🟢 -66%	🟢 -40%	
Human toxicity PM₁₀ (in g PM ₁₀ equivalent)*	🟢 -66%	🟢 -73%	🟢 -39%	

🟢 carton significantly better¹ * per packaging required for 1,000 L food product
 🟡 no significant difference¹
 🟠 carton significantly „worse“¹
¹ at a 10% significance level

Example of food:

In the Europe-wide life-cycle assessment for long-life food products packaging, it was demonstrated that using carton packs can reduce CO₂ emissions and the consumption of fossil resources, respectively, by up to 60 per cent.

The study included food metal cans, glass jars, carton packs and pouches for long-life food products such as soups and tomato products.

Overview LCA results
Beverage carton vs. PET bottle

	Small size	Medium size	Large size	
Fossil resource consumption (in kg crude oil equivalent)*	🟢 -75%	🟢 -51%	🟢 -47%	Resource-related impact categories
Non-renewable primary energy (in giga joule)*	🟢 -70%	🟢 -42%	🟢 -35%	
Total primary energy consumption (in giga joule)*	🟢 -61%	🟢 -24%	🟢 -14%	
Use of nature (in m ²)*	🟡 +65%	🟡 +93%	🟡 +85%	
Climate change (in kg CO ₂ equivalent)*	🟢 -64%	🟢 -28%	🟢 -18%	Emission-related impact categories
Acidification (in g SO ₂ equivalent)*	🟢 -54%	🟢 -13%	🟡 -1.3%	
Eutrophication (in g PO ₄ equivalent)*	🟢 -56%	🟡 +/-0%	🟡 +5%	
Human toxicity PM₁₀ (in g PM ₁₀ equivalent)*	🟢 -57%	🟢 -15%	🟡 -7%	

🟢 carton significantly better * per packaging required for 1,000 L non-carbonated soft drinks
 🟡 no significant difference
 🟠 carton significantly „worse“
¹ at a 10% significance level

Example of non-carbonated soft drinks:

Compared to alternative packaging solutions such as disposable glass and PET bottles, in this life-cycle assessment carton packs again performed considerably better in virtually all environmental categories. The results for the carton were especially favourable in respect of the key environmental impact categories 'Climate change' (CO₂ emissions), 'Consumption of fossil resources' and 'Use of primary energy'.

More pioneering achievements:
**SIG Combibloc launches
FSC®-labelled carton packs
world-wide**



In 2010, Yili in China was the first dairy products manufacturer to launch yoghurt drinks in FSC®-certified aseptic beverage cartons.



Since March 2011, Earth Wise brand juices and juice drinks from Johanna Foods have been on sale in the US in the handy small-size carton packs with FSC® logo.

2012: FSC®-labelled carton packs from SIG Combibloc in 21 countries

2012: more than 1,600 products
in FSC®-labelled carton packs
from SIG Combibloc world-wide

In late 2009, SIG Combibloc became the first manufacturer of carton packs to have all its production sites world-wide certified for a continuous product chain of custody (CoC) in accordance with the criteria of the Forest Stewardship Council®. That was the requirement to enable SIG Combibloc to offer customers across the globe carton packs that are permitted to carry the 'FSC Mix' label.

The first SIG Combibloc carton packs with the FSC® label were launched nation-wide in 2009 in all German branches of the Lidl chain. These were the first FSC®-labelled beverage cartons for fruit juices and ice teas to hit the market in Europe. Following the subsequent launch of FSC®-labelled packaging in other European countries, SIG Combibloc then worked with China's leading dairy enterprise, Yili, to offer the first carton packs with FSC® label in China. And in the USA and South Africa, the first carton packs with FSC® label came from SIG Combibloc.

FSC®-labelled carton packs have also been launched by Johanna Foods, one of the biggest providers and co-packers of juices and fruit drinks in the USA, and DairyBelle, South Africa's leading dairy company.

SIG Combibloc carton packs carrying the FSC® label are now on sale in Europe, Asia, North and South America and Africa; a total of more than 1,600 different product packages in 21 countries.

In June 2012, the proportion of SIG Combibloc carton packs that were FSC®-labelled was 16 per cent. SIG Combibloc's goal is to increase the percentage of FSC®-labelled carton packs to 40 per cent in the five years from 2010 to 2015. With a figure of 16 per cent at the end of June 2012, we're already well on target – six months ahead of the half-way point.



Pioneer in South Africa: in 2012, dairy company DairyBelle is bringing out UHT milk in 1-litre carton packs with the label of the Forest Stewardship Council® in South Africa for the first time.



Premiere in Europe: juices, nectars, juice drinks and ice teas in aseptic beverage cartons with the FSC® label have been on sale in German branches of the Lidl chain since October 2009.

WWF: FSC® label enables purchasing decisions that benefit the environment

The standards of the FSC® in terms of responsible forest management are accepted by international environmental protection organisations, and appropriately supported – by the World Wide Fund for Nature (WWF), for instance. Johannes Zahnen, in charge of forestry policy and business partnering at WWF Germany, speaks in an interview about certification systems, the labelling and its impact on the public.

Johannes Zahnen,
WWF Germany



So can a label give consumers a greater understanding of a complex subject such as responsible forest management?

Johannes Zahnen: Globally, the number of consumers who take a responsible attitude to their own consumer behaviour, and who are aware that with their purchase choices they can personally contribute to the success of high-quality, sustainable goods, is on the rise. The label acts as a leading stimulus. The crucial factor is that the relevant label on the products is accompanied by a wide range of information for the consumer – and in particular, that it has credibility! Currently, FSC® is the most stringent and the most widely accepted certification for sustainable forest management in the world. The WWF works closely with partner companies to tell people about the benefits of FSC®-certified products, and to make these benefits clear for customers. We believe that the labelling of beverage cartons has had a particular effect on perception, within the food industry and among consumers. In fact, studies in various parts of the world have shown that the level of public awareness of the FSC® label is growing. In Germany, where Europe's first beverage cartons with FSC® label were launched in the fruit juices and ice teas segments, in 2011 the level of prompted awareness of the FSC® label was already around 28 per cent. And in Great Britain, according to one study a full 43 per cent of consumers claimed to recognise the FSC® logo – four years previously, that figure was just 19 per cent. A similar dynamic has also been observed in other parts of the world: in Hong Kong, for instance, 29 per cent of consumers recognised the FSC® label in 2011, where in 2010 it was 16 per cent. We believe the FSC®-labelled carton packs are making a key contribution to increasing this awareness. (Source: FSC®: Facts and Figures on FSC® growth and markets, April 2012)

The FSC® label can now be found on beverage cartons all over the world – so far, on several billion SIG Combibloc carton packs. How do you rate the public impact – on consumers and on other food manufacturers and industry sectors?

Johannes Zahnen: In terms of changing our society in an effective and sustainable way, business bears an important share of the responsibility. The retail market in particular has a key role here – as the interface between industry and consumers, it is the most significant driver in establishing voluntary and independent proof of origin. With the offer of credibly certified goods and packaging, the retail market now gives customers the opportunity to choose such products out of preference. We believe the broad communication impact of consumer goods packaging is enormous. So we believe that having the FSC® label on food and beverage packaging will give a considerable boost to consumer awareness of responsible forestry. The launch of the beverage cartons with the FSC® label has raised awareness among consumers and in companies within the food industry. FSC®-labelled carton packs are helping to make the importance of responsible forest management and the wide applicability of the topic within society more 'graspable' in everyday life too – quite literally.

The FSC® CoC certification of all production sites, and reaching the 16 per cent FSC®-labelled carton packs milestone at the end of June 2012, are steps on the path towards SIG Combibloc's long-term goal of having an FSC® logo on all SIG Combibloc carton packs. How do you rate this ambitious goal?

Johannes Zahnen: We need companies with clearly defined, ambitious goals! Only a business that has set itself firm, positive goals can aim for them with bold, motivated actions. It's great that SIG has come out strongly in favour of the FSC® and wants to work actively to achieve this goal. The key thing is that SIG continues actively to press ahead with this movement, motivates suppliers, gets customers enthusiastic about the issues and ultimately gives consumers the opportunity to opt for a better product. As people become more aware of the importance of responsible forest management, the food industry too will increasingly choose to use FSC®-certified packaging. The path to having the FSC® logo on all carton packs from SIG Combibloc is a long one, but nonetheless a feasible one.



Collecting, sorting, recycling: We are supporting local recycling initiatives – all over the world

For SIG Combibloc, recycling is an important contribution to keeping valuable material resources within the economic cycle. SIG Combibloc carton packs can be fully recycled once they have been emptied, and they are also compatible with all other national recovery and waste management options. A requirement for successful recycling is an efficient collection and sorting system. Actively supporting the development and expansion of national collection and recycling systems, in countries such as China, Thailand, Brazil and Great Britain, is therefore part of SIG Combibloc's environmental sustainability strategy.

Example of Thailand:

In Thailand, SIG Combibloc works closely with the 'Beverage Carton Group' (BCG), and supports a range of initiatives aimed at the recycling of carton packs within municipal authorities and in schools.

All the schools involved collect their empty beverage cartons on an ongoing basis, and then send them on for recycling. Following the disaggregation of the cardboard and the separating out of the composite materials, the wood pulp fibres recovered from the carton packs are then used as the basic raw material for new paper products and corrugated cardboard. The remaining compound of polyethylene and aluminium recovered is used to manufacture products such as special roofing tiles.

These are then used, for instance, to retille roofs destroyed in floods or similar disasters. But the recycled aluminium and polyethylene material is also used in the manufacture of tables and chairs.

The aim now is to expand the commitment within the campaign from schools to universities, and to reach more and more of Thailand's provinces.



Example of China:

In China, there is a state-funded school milk programme. The programme aims to improve children's health by helping them eat a nutritious diet. For this purpose, milk packaged in aseptic carton packs is distributed to primary school children and Year One pupils at secondary schools, at a very low price or even free of charge, every day. In November 2011, a recycling pilot project for school milk cartons, involving 1,000 pupils, got under way at the 'Starlight' school in Chongqing. SIG Combibloc is the initiator and key coordinator of this recycling project, and is responsible for putting in place an effective organisational system and providing training materials. In addition, SIG Combibloc contributes to the logistics costs.

Within the first three months, the collection rate for empty school milk cartons had already reached 75%. The carton packs are then recycled. The pupils, the school administration and all the companies involved are equally enthusiastic about the project.

SIG Combibloc is now planning to expand this initiative. The aim is ultimately to use this system to recycle all empty aseptic school milk cartons in the city of Chongqing. At present, SIG Combibloc is working with local cardboard collection groups to develop and build up an efficient collection logistics system that will be supported and welcomed by all key stakeholders.





Example of Brazil:

In Brazil, recyclable material is mainly collected by people known as 'catadores' ('rubbish collectors'). The recycling trade association CEMPRE (Compromisso Empresarial para Recyclagem) now makes sure these collectors are organised into cooperatives and are supported by the government. The collectors play a key role in waste management in Brazil's cities.

As one of the member companies in the recycling trade association, SIG Combibloc is committed to implementing the environmental principles propagated by CEMPRE and assisting in developing new ecological initiatives. This includes tasks such as managing and developing the cooperatives that collect and sort the waste, and assisting local authorities in introducing waste separation programmes.

Locally, SIG Combibloc promotes the recycling of empty carton packs through joint pilot initiatives with key customers, the government and various organisations and collectives.

SIG Combibloc is currently focusing its efforts on three cities where, due to a steady rise in sales of beverage cartons, the amount of recycling is also set to increase: Goiânia, in Brazil's central region, where key SIG Combibloc customers make more than 50 per cent of their sales, Campo Largo in the south of the country, where SIG Combibloc's new production plant is located, and Cruzeiro do Oeste, also in southern Brazil, where a new customer has its head office.



Example of Great Britain:

SIG Combibloc is a founder member of Britain's Alliance for Beverage Cartons and the Environment (ACE UK), and has worked continuously with the Alliance to steadily increase the rate of beverage carton recycling – through municipal household collection, 'bring' systems with collection points, and cooperation with recycling companies. SIG Combibloc has also assisted with the development and specialisation of a local recycling partner. This helps motivate more local authorities to collect carton packs from households.

The first beverage carton recycling plant in Great Britain is operated in Halifax by Sonoco Alcore. The plant's capacity is set to be 25,000 tonnes of carton packs – corresponding to around 40 per cent of all carton packs sold in Great Britain. Since 2006, the number of local authorities in Britain in which empty carton packs are collected has increased by around 70 per cent, to almost 90 per cent. New recycling technology and the increasing collection quantities will ensure beverage cartons are effectively and successfully recycled. The recycling plant features the latest state-of-the-art equipment. The stable wood pulp fibres recovered will afterwards be processed into products such as covers for clingfilm packaging and cores for fabric rolls.

Health and safety for people and the environment

How can safety be measured? How can serious accidents be avoided, and employees and the environment be protected? How many working days are lost as a result of accidents? These and other issues are key concerns of safety management at SIG Combibloc.

The areas of environment, health and safety (EHS) are strong pillars of the company's social responsibility, and elements of SIG Combibloc's sustainability strategy. In this context, compliance with specific rules contributes to the sustainable growth of the company, and helps increase productivity and value creation.

A high level of productivity goes hand in hand with on-the-job safety. SIG Combibloc therefore methodically and proactively encourages a culture of safety consciousness, which is informed by a clear vision and mission, strategically organised and defined by standards and fixed goals. We want to be among the top companies when it comes to on-the-job safety, and we are getting closer to this goal through continuous improvement.

We have introduced global minimum standards which in some cases exceed the local requirements. An international network provides for global exchange of experiences and a system of 'best practice sharing' among our production sites, along with the consistent further

development of our safety culture. The key data on safety at work are tracked at each site. Every member of staff is responsible for maintaining our standards, and works to play his or her part in creating an exemplary safety culture.

In the period from 1 January 2009 to 30 June 2012, we were able to reduce our rate of accidents with lost working days by around 25 per cent, and we reduced the number of reportable accidents at work by around 50 per cent.

Within the SIG Group's global network, we have identified potential risks at the individual sites, and developed appropriate actions around these. The main focus here has been on optimising protective equipment and on improving finger safety during the performance of mechanical tasks. This includes eliminating potential pinch and crushing points, and enhancing cut protection when handling our materials.

SIG Combibloc has set itself the goal of reducing the number of accidents at work with lost working days by a total of 60 per cent, and the number of all reportable accidents by 40 per cent by 2014.



For any further questions or comments,
please contact info@sig.biz

www.sig.biz



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