

# Environmental Report 2014





# 100 years of preserving foods and nature

In 2015, Elopak celebrates the centenary of the Pure-Pak® carton, the iconic paper based packaging for liquid foods. We are proud of reaching this milestone, as not many product designs in general or packaging designs specifically will last that long without significant changes.

We are of course also continuously improving our products. The carton used to be coated by wax, but in 1966 we switched to polymers, due to the superior qualities of these materials in protecting the contents of the carton. In 2014, we started phasing in polymers made of renewable raw materials as part of our ambitious environmental strategy.

By doing this, we are able to offer to the market a packaging based on virtually 100 % renewable raw materials. At the same time, we are lowering the carbon footprint of the carton, from a level which was already best in class within liquid packaging.

Elopak strongly believes in producing high quality packaging, whilst continuously lowering the environmental impact of our operations. Our vision is to have a zero net impact on the environment. We are well underway towards that goal.

Niels Petter Wright, CEO Elopak

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# Packaging by Nature™

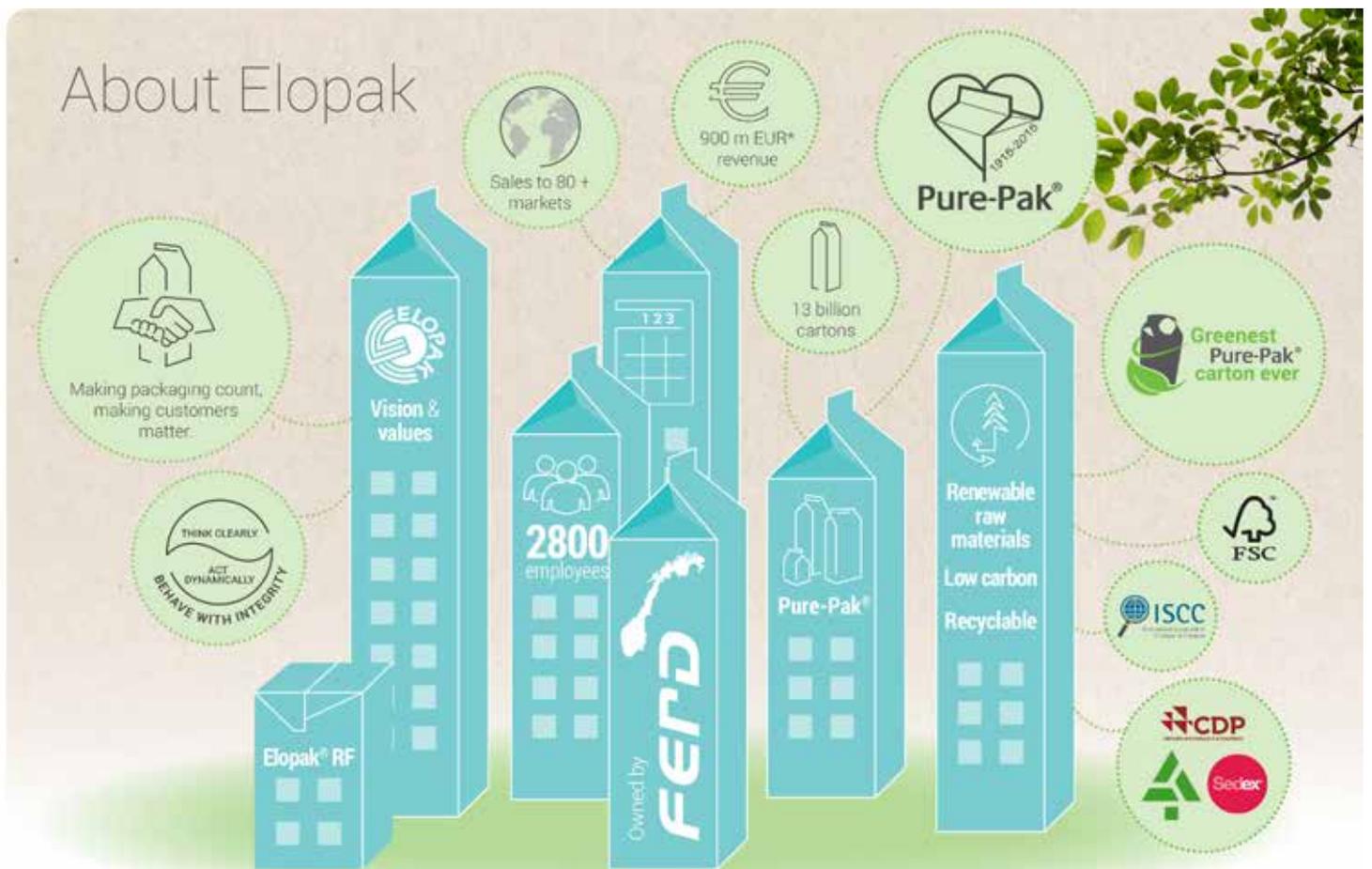
For many businesses, environmental issues are about compliance to environmental legislation, and ensuring that the environmental impact is kept to a cost-efficient minimum. For Elopak, such issues are of course important, but in addition we are producing packaging that is a part of the natural forest cycle. Without healthy forests, our cartons simply cannot be produced. Therefore, environmental issues are part of our reason to be. We are producing Packaging by Nature™.

In 2014, we strengthened that position further, by starting the transition from fossil based polymers to polymers made from renewable raw materials. We are now able to produce cartons which are fully originating from renewable raw materials.

As the important international climate meeting in Paris (COP 21) is drawing closer, it is clearer than ever that climate change is perhaps the most important challenge facing humankind. Everyone must do their part to solve this problem; consumers, industry and governments. We are stepping up to the challenge, by further lowering the carbon footprint of our products and operations. We accomplish this by phasing in renewable electricity, increasing the sourcing of renewable raw materials, and lowering the energy consumption at our factories.

As our environmental strategy Future Proofed Packaging clearly states, we want our cartons to be able to serve society also in the future. The only way we can accomplish that, is to further lower our environmental impact.

Kristian Hall, Director Corporate Environment



\*inclusive 100% of partly owned Joint Ventures



# Highlights 2014

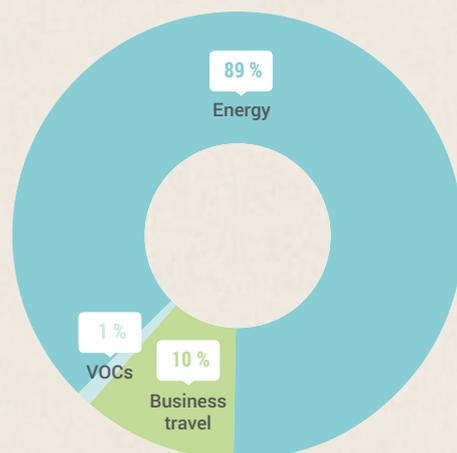
In 2012 we embarked on a journey to Future Proof our packaging as part of our ambitious environmental strategy. Two years on, we are able to demonstrate the concrete effects of our strategy. 2014 can be described as a landmark year for us, as we have considerably reduced the greenhouse gas emissions from our operations, as well as increased the renewability of our products. As we celebrate 100 years of the Pure Pak® carton, we are proud to highlight our key environmental results.

## Elopak cartons – the low carbon choice

- 9% reduction in absolute GHG\* emissions since 2013
- 18% reduction in GHG emissions per produced carton since 2013

\*Greenhouse gas emissions measured in CO<sub>2</sub> equivalents - CO<sub>2</sub>e

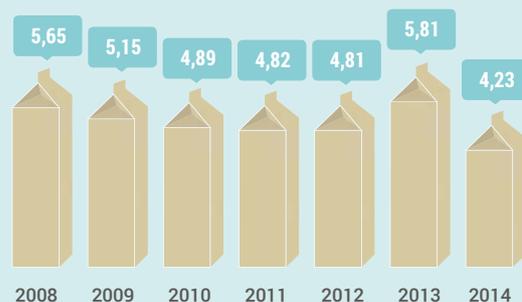
## Elopak Group GHG emission sources (percentage of total)



## Elopak Group GHG emissions (tons CO<sub>2</sub>e)



## Elopak Group GHG emissions per produced carton (gCO<sub>2</sub>e)



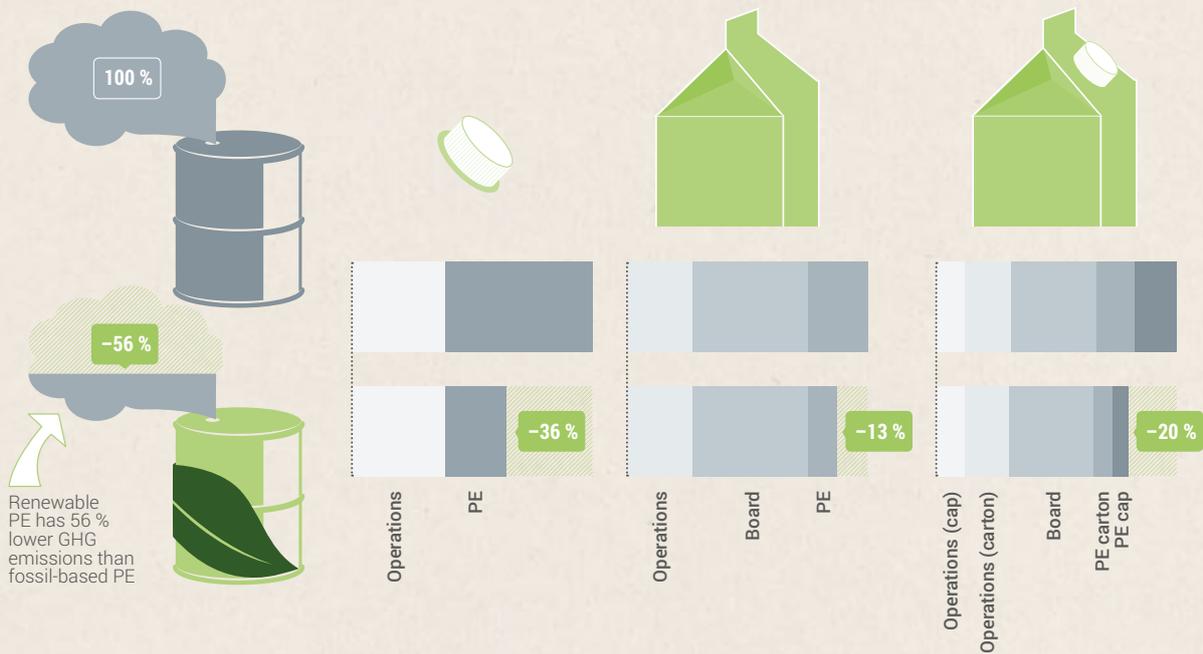
### Elopak cartons – the renewable choice

- 100% FSC™ Chain of Custody certification achieved
- 99% of purchased paperboard from documented legal and acceptable sources, 100% from January 2015
- 3,5 billion FSC certified cartons sold
- Launch of cartons and closures featuring renewable polyethylene (PE)
- 20% reduction of carbon footprint for a milk carton with cap when using renewable PE

### Elopak Global FSC sales (percentage of sales)



### Reduced GHG emissions for a typical milk carton



### Elopak cartons – recyclable – as always

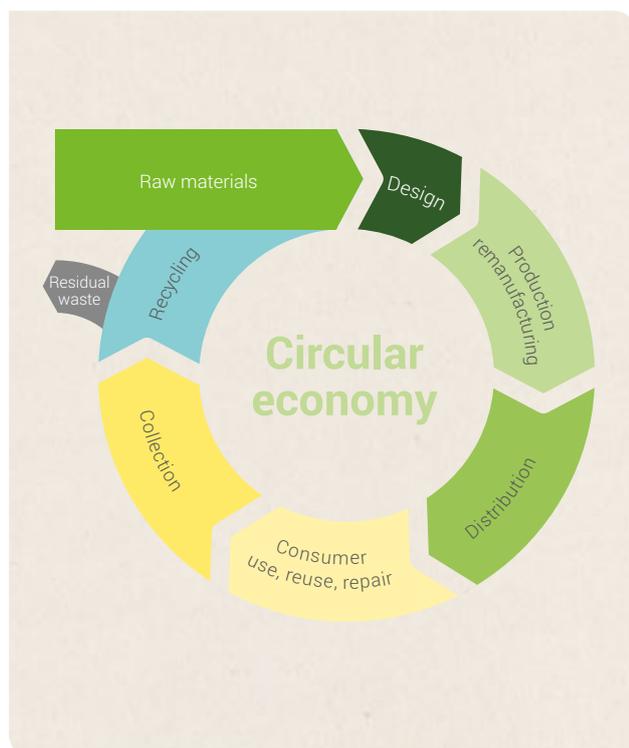
- 99% of Elopak's internal paperboard and carton waste recycled
- An average of 34% of Elopak cartons sold in Europe and North America recycled
- 42% average beverage carton recycling rate in Europe.

# Material Matters

The economy is dependent on natural resources such as forests, water, fossil fuels and minerals. However, these resources are subject to physical and ecological limits. How the materials are sourced and what happens to them post-consumption is essential for a more resource-efficient and circular economy.

The future availability of natural resources is critically important to sustain and improve current standards of living, as well as to increase economic activity<sup>1</sup>. However, climate change, deforestation, loss of natural resources, and other environmental problems cost the global economy trillions of dollars annually. Since the industrial revolution, our economies have developed a *take-make-consume-dispose* pattern of growth. This *linear* model was based on the assumption that resources are abundant, available, easy to source and cheap to dispose of. It is increasingly being understood that this threatens the environment and the competitiveness of industries. It is essential that industries steer away from the linear model and sail towards a more *circular* model in their business endeavors, whilst ensuring responsible sourcing of all raw material.

<sup>1</sup> World Economic Forum, The Future Availability of Natural Resources, 2014



## What is the circular economy?

In the 1970s, Walter Stahel coined the idea of *cradle-to-cradle* production, where inputs and outputs of production are valued as raw materials that can be reused. By developing a more *closed loop* approach to production processes, waste becomes a valuable resource which can, for example, be fed into a new industrial process. Nowadays, the term *circular economy* is appearing more and more in policy discourse and academia.

Stahel's idea was a reaction to the *cradle-to-grave* production and consumption model that often dominates today, where a vast majority of product materials are extracted from the environment, processed, refined, then turned into consumer products that are often disposed of in landfill or incinerated.

A circular system rejects the linear model, favoring quality products and materials that can be reused rather than thrown away. Waste then becomes a useful input to be reincorporated into a new product or industrial process. It is equally important to ensure that the raw materials at the beginning of the cycle are sustainable and of high quality so that the cycle can continue to thrive and drive economic growth. A steady flow of primary materials are essential to sustain a circular economy.

The carton is in a special position with regards to this principle. Due to food safety issues and to physical properties

If businesses manage to combine the responsibly sourcing of renewable raw materials and improve recycling of products after use, there should be ample possibilities for industrial growth and prosperity for more of the world's inhabitants.





such as stiffness, we are using virgin fibers in our cartons. These fibers are crucial for the paper industry, as these high-quality fibers are often used in quality secondary paper packaging. Used fibers from beverage cartons can be reused up to seven times before they are discarded. Virgin fibers, such as those in Elopak cartons, are contributing to the paper industry's circular production .

If businesses manage to combine the responsibly sourcing of renewable raw materials and improve recycling of products after use, there should be ample possibilities for industrial growth and prosperity for more of the world's inhabitants.

### What is Elopak doing in this picture?

Elopak's strategic plan *Future Proofed Packaging* focuses on reducing the environmental impact across our value chain. We put a high priority on minimizing the carbon footprint of our products and our industrial activity. Our strategic pillars will contribute to lower emissions of greenhouse gases beyond Elopak's own operations.

It has been shown through a recent scientific study<sup>2</sup> that the beverage carton has the lowest carbon footprint of comparable packaging materials. We are proud of that, but we want to become even better. The carton is both the low carbon and the renewable choice for liquid food packaging.

<sup>2</sup> Anthesis: Literature review of 28 LCA studies for liquid food packaging 2014

The carton is both the low carbon and the renewable choice for liquid food packaging.



### Impacting the beverage carton value chain towards 2020

Materials matter when it comes to the climate impact of our cartons. The biggest portion of GHG emissions embedded in the footprint of our cartons comes from the raw materials we use.

- If Elopak meets its 2020 goal for the strategic pillar of Renewable Raw materials (no fossil based materials), GHG emissions from our carton's value chain (from forest to customer gate) will decrease by more than 15% in 2020.
- If Elopak meets its 2020 goal of 100% renewable or carbon neutral energy consumption, our GHG emissions from will decrease by more than 80% compared to business-as-usual from base year 2013.

These two strategic pillars are therefore the biggest contributors to a more sustainable packaging alternative for the liquid food market, when taking into account the value chain from forest to customer gate. Achieving our goals for these two pillars will reduce the total yearly GHG emissions by approximately 30% and bring down the carbon footprint of a typical Elopak carton (with cap) by 40%.



# Facing up to the big picture



## Business growth in a shrinking world

"How can we continue to do (more) business in a resource constrained world?" is a critical question of our time. Businesses have never had to pay more attention to the resources and value chain relationships they depend upon.

Most conventional production models are based upon the collection of valuable materials, application of energy, labor, adding design and brand value and sending them out into the world for use and disposal before starting again almost entirely from scratch.

Of course this would all be fine if scarcity was not a problem: if the materials, energy and inputs we rely upon for industrial production were either eternally abundant or safe to distribute and use. However for most industrial models this is simply not the case.

Many businesses developed at a time when resource costs were low and essential inputs such as water, energy and raw materials could safely be considered as items of marginal cost. New and growing environmental and social trends present real challenges to this status quo.

## From scarcity to abundance

Recognizing the challenges posed by scarcity is prompting a focus upon the *abundance economy*, using materials and building production processes that inherently avoid or otherwise manage the challenges of scarcity.

In this context, we can identify two aspects of abundance that can contribute to a good or service:

### Literal abundance

A focus upon the use of materials that are naturally abundant or which can be sourced sufficiently through sustainable production and stewardship approaches. Basing industrial models upon these types of raw materials and flows would allow us to operate beyond the conventional limits to growth which currently constrain us.

## Functional abundance

Here abundance is achieved through the stewardship of non-renewable resources. It features in *cradle-to-cradle* processes (within the *technical cycle* where scarce and potentially harmful materials are used repeatedly within closed loop industrial models) and in the wider *circular economy* approach where the waste of one industrial process becomes the feedstock of another.

## Finding the abundant path

Businesses will need to exploit the pathway that best suits their product or service, while being aware of the risk of disruption from other/new business models.

Companies fundamentally reliant upon biological supply chains will be able to develop their circular economy focus upon *literal abundance*, maximizing the renewability and sustainable sourcing of their raw materials. For them, sustainability means putting renewability, resource/energy efficiency and innovation at the heart of corporate strategy.

Put simply, a company seeking to become sustainable and successful over the long term needs to:

- Consider the longevity and safety of supply of the resources they depend upon;
- Value and enhance the quality and diversity of the natural capital upon which human life depends, and;
- Prioritize mutual equity in relationships with suppliers, customers and other stakeholders.

Big challenges require big thinking. The companies that will survive and thrive over the coming decades will be those that are open to new ideas, engaged in innovative industrial approaches and focused upon listening to signals from the wider world.

Such companies will, by their nature, be fit for the fast-changing future that is coming.

Joss Tantram, Partner,  
Corporate Sustainability, Terrafiniti LLP



# Elopak's Future Proofed Packaging Strategy

## **PILLAR 1:**

Renewable Raw Materials

## **PILLAR 2:**

Sustainable Energy

## **PILLAR 3:**

Sustainable Logistics

## **PILLAR 4:**

Customer Operations

## **PILLAR 5:**

Total Recycling

## **PILLAR 6:**

Culture & Governance

TURN OVER





## PILLAR 1: Renewable Raw Materials

2014 was the year of the launch of Elopak's renewable polyethylene (PE) initiative. Working together with one of our polymer suppliers and key customers, we were able to start the first commercial production of ISCC PLUS certified cartons coated with renewable PE in the last months of 2014. We also reached our commitment to FSC certify all our production plants and thus enabling the sourcing of 100% of all fibers used in our cartons, from verified legal and acceptable sources.

### The Renewable Elopak Carton

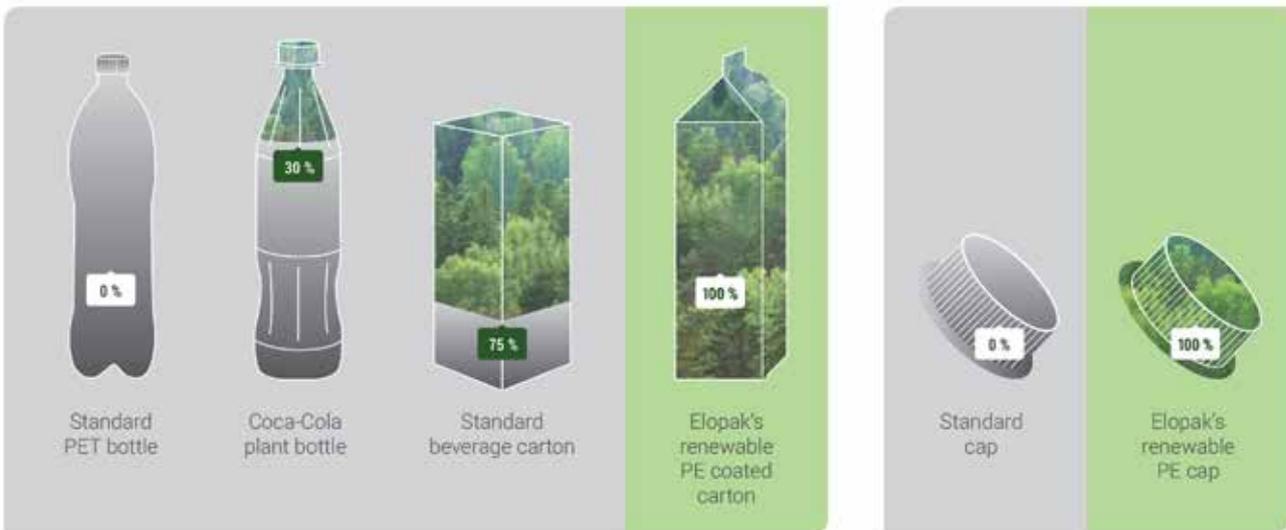


Photo: ACE (UK)

A renewable resource is a natural resource which can replenish with the passage of time, either through biological production or other naturally recurring processes. In contrast, non-renewable resources are limited and therefore will be depleted – such as petroleum and gas.

With reserves of the Earth's resources diminishing, focus on renewable alternatives is increasingly important and central to the concept of a circular economy, in which materials and resources are used efficiently and responsibly throughout their life-cycle, from sourcing to end-of-life. Society has developed in ways which rely on scarce resources that are not re-used or recycled. A change is necessary to ensure resources are available for future generations.

## Forestry

The main part of the carton (more than 75%) is paperboard, made from a naturally renewable resource – the forest. However, forests are not renewable unless they are managed in a responsible manner. Biodiversity and wildlife must be considered and protected, and trees must be replanted after harvest. One of the main sources for the paperboard in our cartons is the boreal forest of Northern Europe. These forests have an annual net growth in biomass due to replanting and restricted harvest.

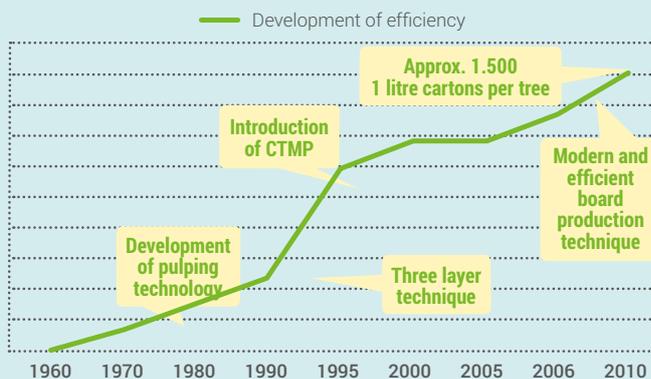
Over the past years we have worked to influence our suppliers to be more efficient in raw material use. Our board suppliers have also increased their productivity by increasing the yield of paper from harvested trees. This means that for every tree that is harvested, more cartons are produced. Elopak has significantly reduced the amount of raw materials in each carton. While maintaining the quality of our cartons, the paperboard weight has been reduced by over 20% over the last decades. This weight reduction has avoided the emissions of approximately 60 000 tons of greenhouse gas emissions.



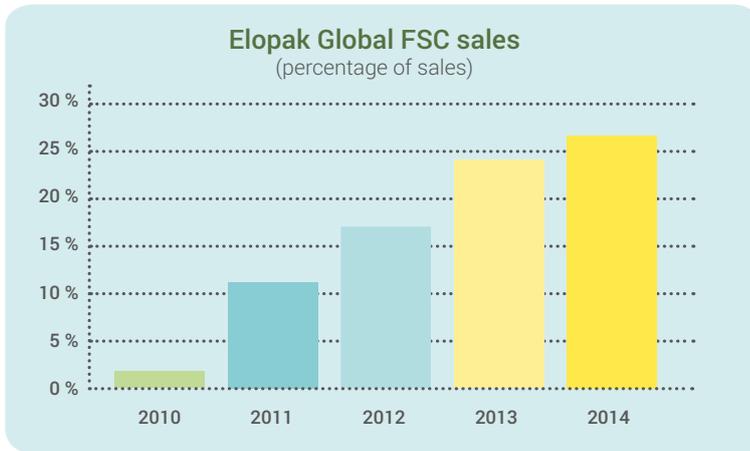
Only responsibly managed forests are truly renewable.



### More milk cartons from the same amount of wood



## Pillar 1: Renewable Raw Materials



### Industry-wide commitment to global sourcing of wood fiber from legal and acceptable sources

ACE – The Alliance for Beverage Cartons and the Environment – provides a European platform for beverage carton manufacturers and their paperboard suppliers to benchmark and profile cartons as renewable, recyclable and low-carbon packaging solutions.

ACE members are the converters Elopak, Tetra Pak and SIG Combibloc, and board suppliers Stora Enso and BillerudKorsnäs. ACE members are committed to globally sourcing wood fiber that is traceable to legal and acceptable sources, using processes that have been independently verified. In detail, the commitment includes:

- Sourcing 100% wood fiber from legal and acceptable sources by 2015
- Securing chain-of-custody certification for all liquid packaging board mills by 2015
- Securing chain-of-custody certification for all beverage carton manufacturing plants by 2018

### What do we mean by legal and acceptable sources?

By “legal and acceptable” or “controlled sources” we mean wood fiber that is verified to NOT come from:

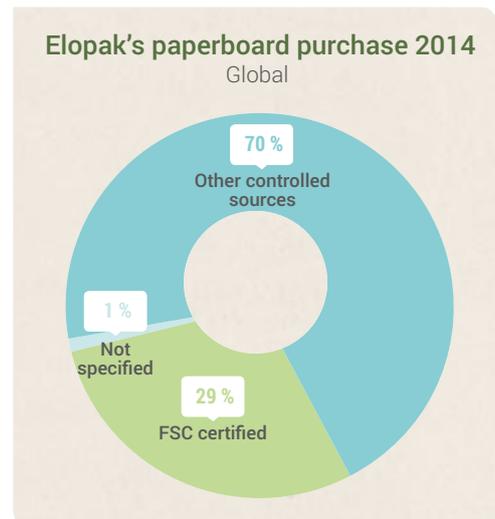
- Illegally harvested wood
- Wood harvested in violation of traditional and civil rights
- Wood harvested in threatened high conservation value forests
- Wood harvested in forests being converted to plantations or non-forest use; and
- Wood from forests in which genetically modified trees are planted.

## FSC

Sales of FSC certified cartons have steadily increased since we started to FSC certify our plants in 2010. In 2014 Elopak reached a sales volume of 3,5 billion FSC-certified cartons, aiming to further increase the number of certified cartons in the coming years.

Equally important is to secure Elopak’s purchase of fibers. Following our commitment, in addition to local legislation, such as the EU Timber Regulation, Elopak ensures all fiber purchased originates from verified legal and acceptable sources. In 2014, Elopak’s purchase of FSC certified paperboard increased to 29% on a global basis and 44% in Europe. 99% of our global purchase was from FSC certified or other controlled sources. The remaining 1% also originates from controlled sources, but cannot be reported as such due to lack of chain-of-custody certification. As of January 2015, 100% of Elopak’s wood fibers are sourced from verified legal and acceptable sources.

Our three Joint Ventures completed their FSC audits in 2014, meaning all Elopak production units are now FSC certified, fulfilling a key part of our commitment with our industry partners.



**THE FOREST STEWARDSHIP COUNCIL™ (FSC™)** is an independent, non-profit organization devoted to encouraging the responsible management of the world’s forests. FSC sets high standards that ensure forestry is practiced in an environmentally responsible, socially beneficial, and economically viable way.

## Polyethylene

Polyethylene (PE) is used as a liquid barrier and comprises the second largest part of the carton, by weight. In addition, the closure is made from polyethylene. In 2014, Elopak launched beverage cartons featuring renewable PE. For fresh milk cartons using renewable PE for coating and closures, it brings the renewability percent up to 100 %.

Most of the renewable plastics on the market today are made from crops, so-called first generation feedstock. However, the renewable PE used by Elopak is produced from biomass from **second generation feedstock**. The feedstock is bi-products from food production regionally sourced within Europe. These are not in competition with human food supply and there is no need for additional agricultural land. By converting waste into a resource we are contributing to the circular economy. In addition, the renewable PE is certified through the entire value chain, by the International Sustainability and Carbon Certification system (ISCC PLUS). ISCC PLUS sets strict requirements for sustainability and traceability through the entire value chain, with chain of custody certification based on a mass balance system.

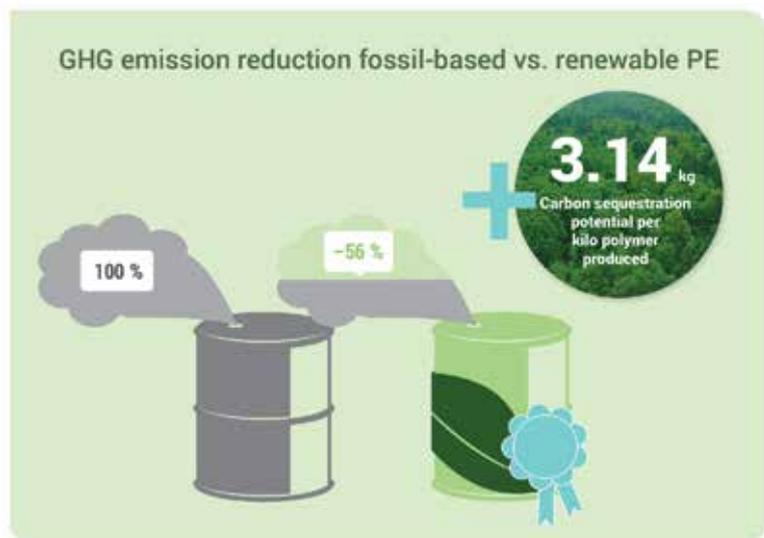
Our production plants in Terneuzen (Netherlands) and Aarhus (Denmark) received their ISCC PLUS certificates in July 2014 and the first certified renewable cartons were produced in November, thus they were among the first cartons in the world to be produced with 100 % renewable raw materials.

The renewable polyethylene is produced in exactly the same way as regular oil-based polyethylene, the only difference is the raw material input. Hence, there are no physical or technical differences between fossil-based PE and the renewable PE. The new, renewable PE cartons are therefore fully compatible with all current filling systems and food regulations.

### Calculating GHG emission reduction potential

The reduced greenhouse gas emissions from renewable PE compared to fossil-based PE is related to lower emissions from the production of diesel (fossil based vs. renewable diesel). There is an additional potential for carbon capture in the carton, a so-called biogenic carbon effect. Biogenic means that carbon from the atmosphere is locked into the biomass, and kept away from the atmosphere for a certain amount of time. This time is dependent on the waste management in the various markets. Due to this, biogenic carbon effect can only be accounted for when a full Life-Cycle Assessment (LCA) is done. In the calculations presented in this report, the additional biogenic carbon effect is not included. Including this will give a potential savings of 3,14 kg CO<sub>2</sub>e per kilo PE produced. This effect needs to be calculated depending on the end-of-life of the finished products, in a complete LCA.

### GHG emission reduction fossil-based vs. renewable PE

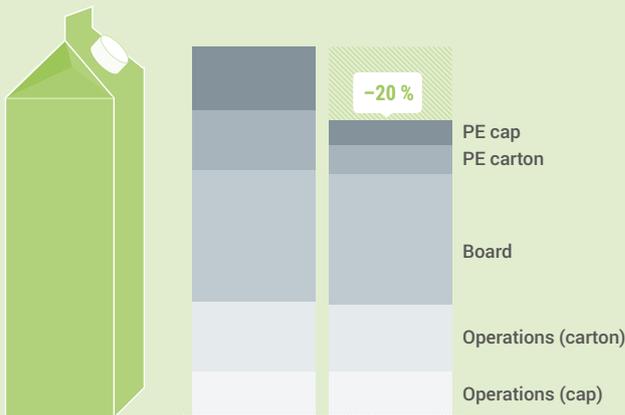


By converting waste into a resource we are contributing to the circular economy.



# Pillar1: Renewable Raw Materials

## GHG emission reduction 1L carton with cap (gCO<sub>2</sub> per 1L unit)



\*Scope: Forest to customer gate

Using renewable PE significantly reduces the carbon footprint of the beverage carton. For a typical PE coated carton (for chilled milk) with screw cap, the reduction is 20%<sup>1</sup>.

<sup>1</sup> Verified by BestFootForward/Anthesis

## Other materials

Our main efforts in 2014 have been focused on the renewable PE project. Other materials in some cartons include the oxygen barriers aluminum and EVOH, and other tie layers. Since PE is the main component, and most of our produced cartons only contain paperboard and PE, the main focus has been on finding alternatives to fossil based PE. However, we are engaged in various projects with research organizations and suppliers to find alternatives to the oxygen barriers in our cartons.



**ISCC** stands for "International Sustainability and Carbon Certification" and is a world-wide applicable and acknowledged certification system for any kind of bioenergy and biofuels. ISCC PLUS is specific for food and feed products as well as for technical/chemical applications (e.g. bioplastics) and applications in the bioenergy sector (e.g. solid biomass).

### Traditional plastics Fossil-based



- Destruction of natural habitats
- Economic volatility

- **Non renewable**
- **High GHG emissions**

### 1st generation renewable Plantation-based



- Use of agricultural land
- Currently not available from Europe

- **Renewable (sustainable)**
- **Lower GHG emissions**

### Elopak solution

### 2nd generation renewable Organic residue-based



- Contributing to a circular economy
- Sourced within Europe

## MASS BALANCE PRINCIPLE

Switching to renewable raw materials is a major industrial revolution, and Elopak is proud to participate in this by offering cartons with polymers made from renewable raw materials. When producing renewable polymers, industry can follow two different routes:

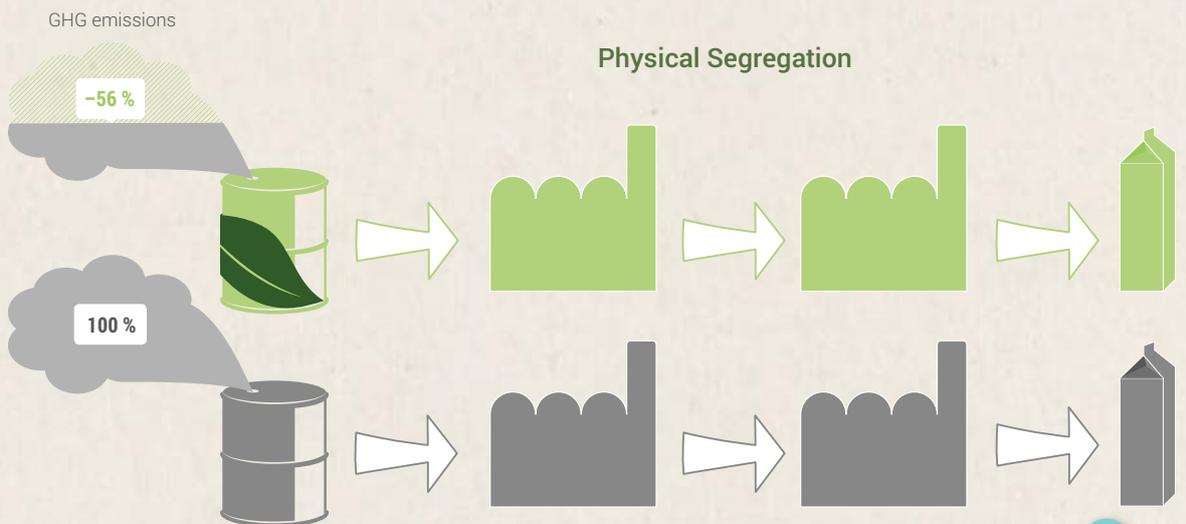
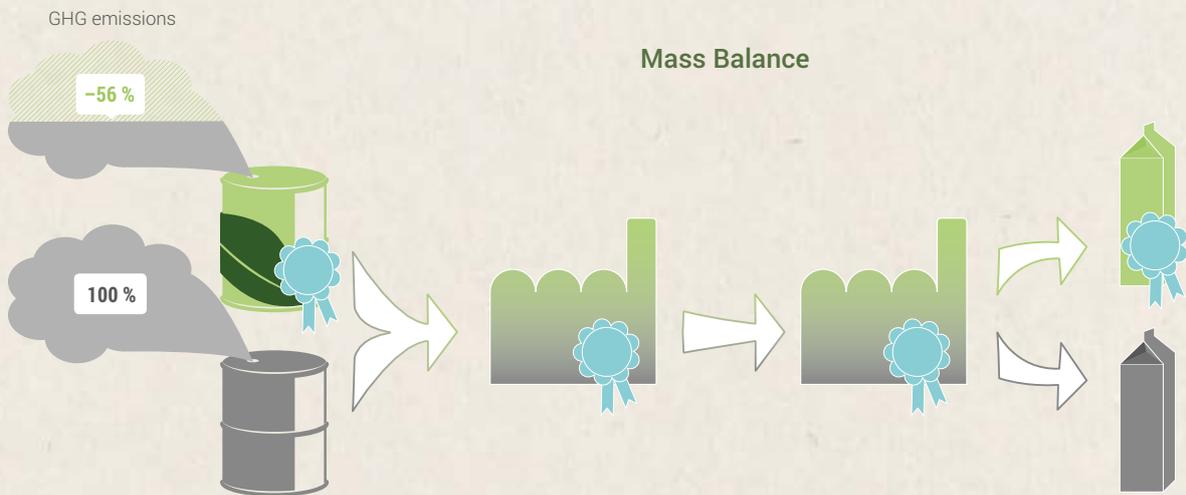
1. A mass balance system utilizes existing plants, and mixes the renewable and the original/existing raw materials.
2. A physical segregation system requires building new factories or production lines to enable the new technology of renewable raw materials.

Elopak is using a mass balance system, which means there is a certified, guaranteed link between the input in to a process and

the output from the process. For each ton of certified material put into production, an equivalent amount of the finished product can be claimed as certified. Within the production unit, products can be mixed. A credible, third party audited certification system is important to secure the balance between input and output.

The mass balance system is beneficial as there is no need to build separate plants or production lines, and it allows for a gradual increase of renewable material depending on the demand. It is also more cost-efficient and reduces the barrier to introduce new technologies

The environmental benefits of using renewable raw materials are the same regardless of which of these systems are used.



2020 VISION:

No oil  
No foil

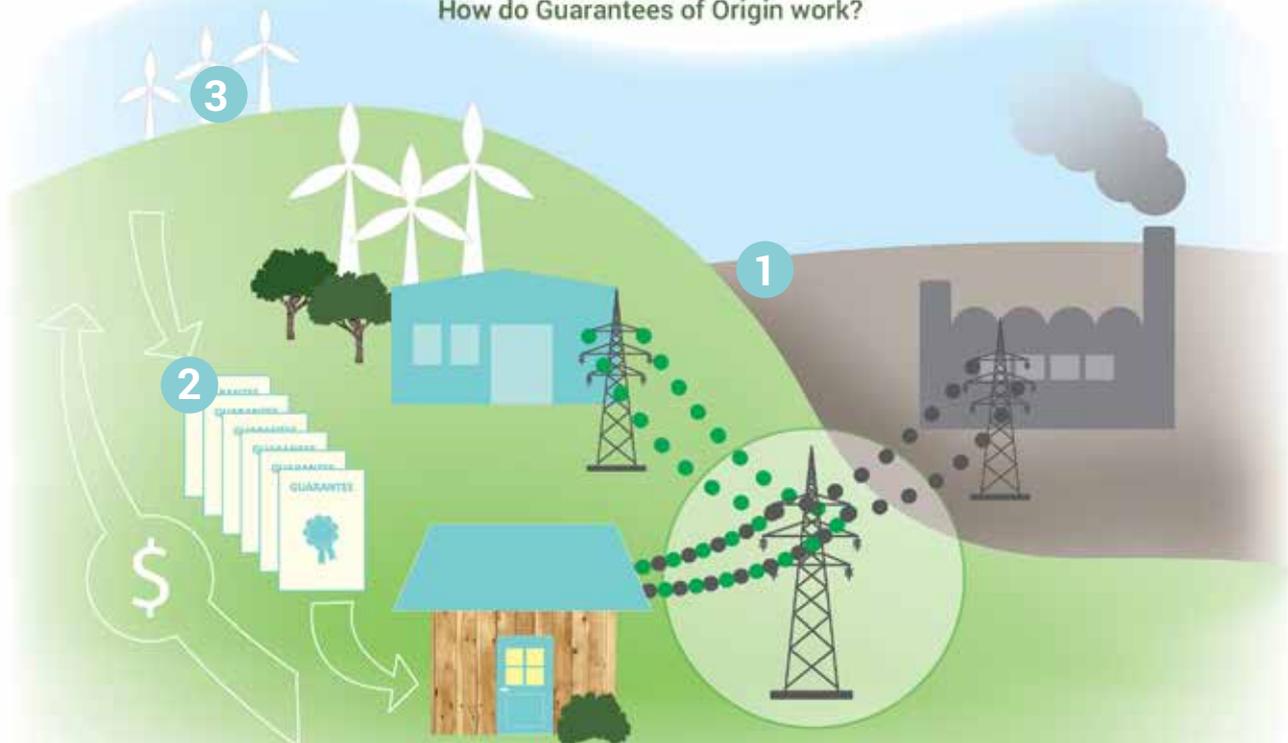


## PILLAR 2: Sustainable Energy

Most of Elopak's internal greenhouse gas emissions originate from the consumption of energy (89% of total emissions), and especially electricity (76%). Due to this, Elopak is phasing in renewable electricity in our electricity mix. We are utilizing the European Energy Certificate System (EECS) for this purpose.

The European Energy Certificate System (EECS) is the official European system for Renewable Electricity Certificates (RECs). The system originates from the European Renewable Energy Directive (Directive 2009/28/EC), and was created to enable cooperation within renewable energy across borders. The system works such that all producers of renewable electricity are granted an amount of certificates corresponding to their actual production (in MWh). They can then sell these certificates, called Guarantees of Origin (GO), to consumers of electricity (businesses and end-consumers). When a GO is used by a consumer, it is cancelled in the system, to prevent double counting (it cannot be purchased or used by other parties). This system has several similarities to the mass balance system described in the previous chapter, it is basically mass balance for electricity. Every country participating in the system has a central organization, called an Issuing Body, which is overseeing the national markets for GOs. In addition, the entire European system is overseen by the Association of Issuing Bodies.

### How do Guarantees of Origin work?



Guarantees of Origin are a system to trace the source of electricity produced.

1. The electrons in the power grid originate from both fossil-based and renewable sources. It is impossible to separate the electrons apart physically. What can be done, however, is to allocate renewable and fossil-based electricity, by way of the invoice/payment flow.

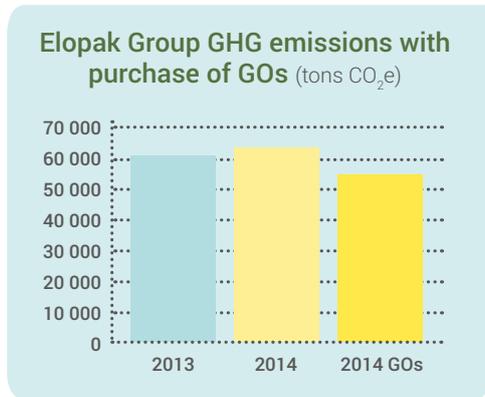
2. By purchasing Guarantees of Origin, you purchase the right to claim that your electricity is green. A system ensures that double counting is impossible.

3. More renewable energy demand leads to more investment in renewable energy. And less greenhouse gas emissions. The whole system is regulated by the European Energy Certificate System (EECS).





Elopak is following the Greenhouse Gas Protocol Corporate Standard (Version 2004), for our environmental reporting. The following graph shows the data with and without the impact of GOs:



In addition to phasing in renewable electricity, Elopak is continuously working to reduce our consumption of energy. At our factories, skilled employees are constantly looking for additional ways to reduce energy consumption. Examples of projects being implemented are the following:

- Installation of energy management systems (EMS) and energy metering systems, to enable very detailed tracking of our energy consumption, for individual machines and other equipment
- Transition to LED lighting
- Installation of *free cooling*, where outside winter temperatures are used to lower the temperature of cooling water, and avoid the increased consumption of cooling machines
- Reusing the energy contained in heated air in our factory halls, for the purpose of heating office spaces



2020 VISION:

100 %  
carbon  
neutral



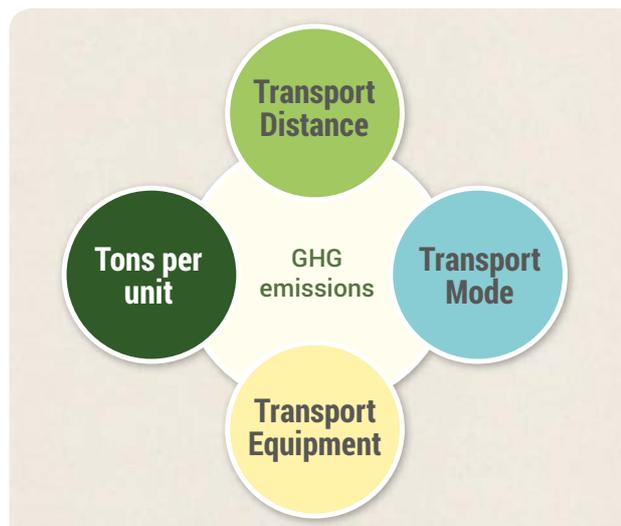


## PILLAR 3: Sustainable Logistics

As outlined in Elopak's environmental strategy, we have expanded our environmental endeavors to also include the environmental impact of parts of the value chain that concern transportation of goods. This approach is viable for all activities related to transportation of our raw materials, semi-finished and finished products.

Our goal is to minimize the greenhouse gas emissions associated with transport of goods. From a materiality perspective we have roughly calculated that transportation counts for more than 10% of the total GHG emissions in the value chain from forest to customer gate. Hence it is important to continuously follow and improve the environmental impact from logistics.

Elopak has defined some key areas to minimize environmental impact from transport:



- **Transport Distance:** Consider transport distance in supplier and allocation decisions
- **Transport Mode:** Work to increase share of sea or rail transport
- **Transport Equipment:** Set requirements for carriers on type of transport equipment (Euro class for trucks, sea vessels etc)
- **Number of tons transported in one unit:** Increase payload (order size, number of cartons per pallet, less urgent transports).

Specifically for road transport, Elopak is focusing on some key elements towards its' suppliers:

- the vehicle type
- the driver's competence

- service of the vehicle
- load factor.

Elopak is seeking to influence and cooperate with our transport suppliers to reduce the emissions from road transport. All these issues, maybe with exception of the load factor, are fields that Elopak cannot impact directly, but rather seek to influence over time.

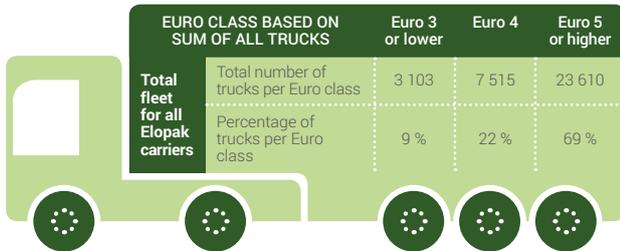
Elopak has defined standard transport conditions in our agreements with transport suppliers. We have divided transport activities into three categories – inbound, internal and outbound activities. For all these areas we have an annual evaluation of the services that we have purchased from external sources. The requirements we set out can be summarized as follows:

- **Transportation Equipment**
  - Trucks used for Elopak transport will be of Euro 4 Standard in Western Europe and minimum Euro 3 standard in Eastern Europe
  - Elopak strives to increase the standard towards higher Euro classes
  - Focused efforts to transfer transportation of goods from road to rail or sea.
- **Environmental**
  - Vehicles and repairs are to be well-documented and conducted in an environmental friendly manner
  - Vehicles must have necessary emergency equipment
  - Tires must be in good condition, adapted to the vehicle and road conditions with a high environmental standard
  - Technical support system must be installed in all new vehicles for the individual monitoring of fuel consumption.
- **The transport supplier undertakes to work towards:**
  - Drivers being trained in fuel efficient driving
  - Increased use of fuels with reduced environmental impact
  - Usage of alcohol interlocks in all vehicles
  - Reducing their environmental impact.



## Moving towards Euro 5 class

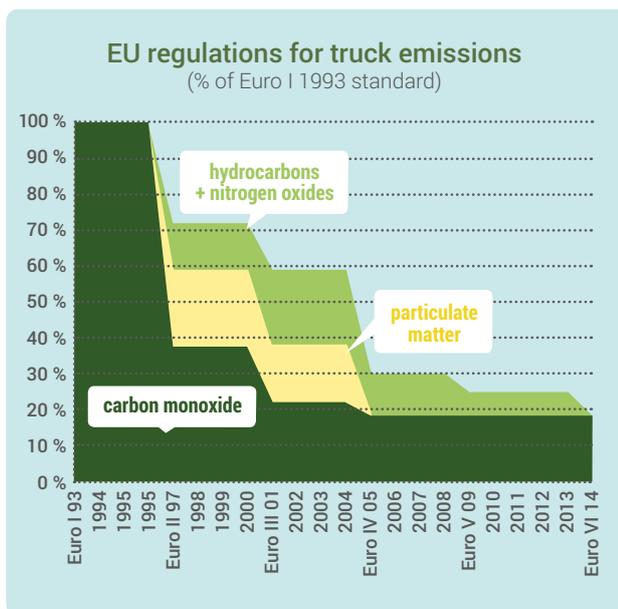
In our last transport tender in Western Europe, Elopak requested information about the fleet of Elopak's suppliers transporting by road. The results show that almost 70% of the available fleet is Euro 5 or higher.



Elopak's target is to increase the share of trucks of Euro class 5 or higher, meaning less emissions per ton shipped and less local emissions such as NO<sub>x</sub>.

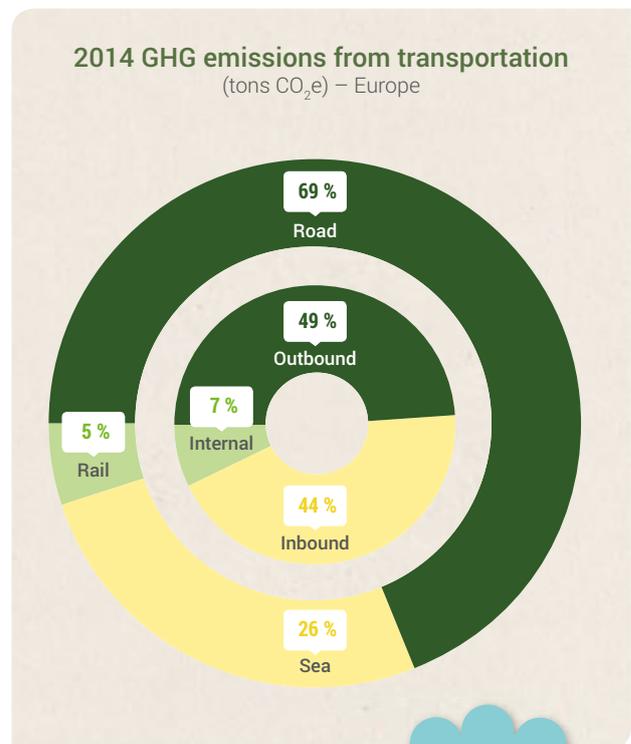
The categorization of truck standards into Euro classes is shown in the diagram. The EU has increasingly stringent requirements for emissions from vehicles that transport goods.

Elopak is seeking to influence and cooperate with our transport suppliers to reduce the emissions from road transport.



## GHG standards

Since our logistics network is complex, Elopak is aiming to digitalize the acquisition and evaluation of the relevant environmental data. The environmental data acquisition is planned to be integrated in our Transport Management System. This will enable us to measure emissions from transport that Elopak arranges and use the data to support environmental, operational and strategic decision-making. GHG emissions from transportation of goods has not yet been included in Elopak's environmental accounting. According to the Greenhouse Gas Protocol (GHG) standards, Elopak should have included internal transport of goods in progress in the annual report of GHG emissions. However, a lack of a suitable tracking system has prevented us from including these emissions so far. As can be seen from the graph below, the GHG emissions from internal transport are only a minor part of the total emissions stemming from transportation of goods. It is Elopak's ambition to annually also follow and inform about the emissions from inbound and outbound transportation of raw materials and finished goods. In 2014 we have done a more in depth investigation of the emissions that stem from transportation. The GHG emission impact from our European transportation amounts to 21,934 tons and is illustrated below:



2020 VISION:





## PILLAR 4: Customer Operations

At our customers there are several hundred machines filling nutritious liquid foods into our cartons. Both the operating cycle and the cleaning/sterilization cycle are consuming energy, water, chemicals and time. It is important both for our customers and for Elopak to optimize this consumption.

Optimizing this consumption is partially achieved by improving the design and programming of the filling machine and by optimizing the set-up at each individual customer. Our technicians are regularly providing service on-site to ensure optimal performance. Elopak is a system supplier who designs and manufactures essential equipment for filling liquid food in cartons. We also take into account the environmental impact our customers experience by running our filling machines.

### Improving efficiency

The ELOEE (Elopak Line Overall Equipment Effectiveness) system provides one central point where all available information from the production line is collected (processing equipment, filling machine, conveyor, wrap-around, palletizer). This allows monitoring of production capacity, volume and efficiency over time, technical downtime and overall traceability.

The system is designed to capture all necessary production line data, such as:

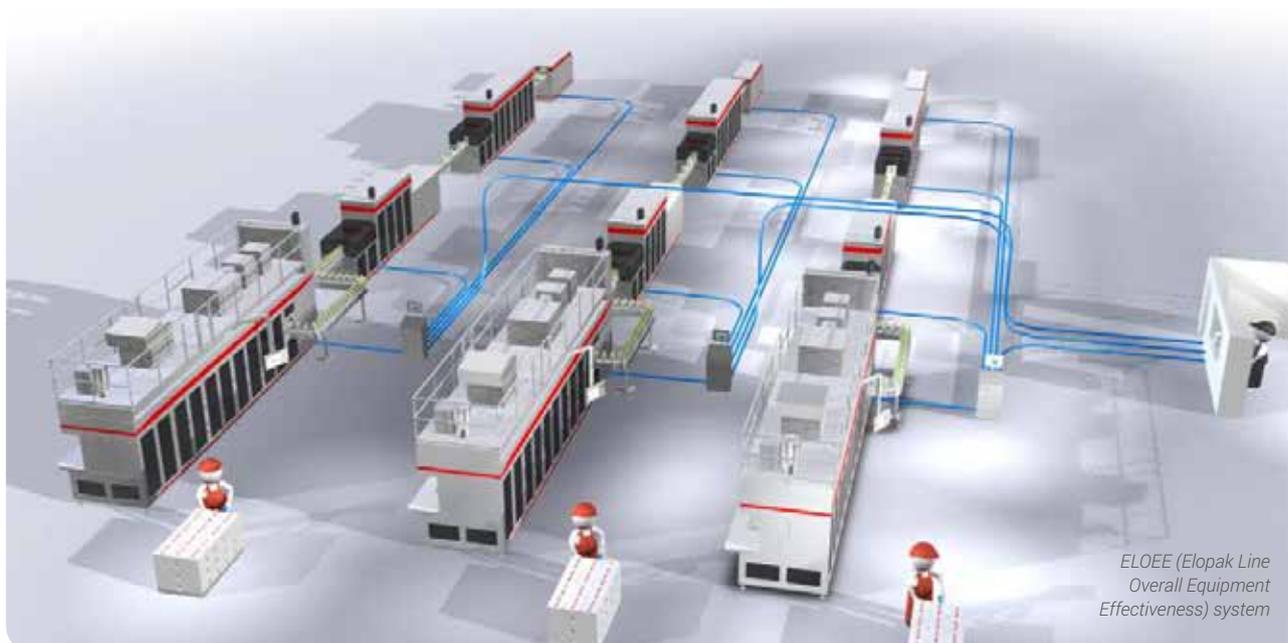
- Production log
- Produced volumes
- Downtime
- Waste
- Action log
- Measured values
- Alarms
- Events
- Status
- Barcode Scan

The data are then used to establish reports and to get a detailed view of production runs in addition to establishing action plans to maintain and improve production capacity, reducing waste and unnecessary costs.

ELOEE will be installed as a standard feature on several of our newer filling machine platforms. It is also possible to install the system on existing filling machines and it will assist in improving the environmental impact.

### Optimizing the preventive maintenance program

Filling machines require regular service to ensure a high quality packaging, and to avoid unexpected stops due to wear and tear of components like bearings, valves and other parts. In Elopak, this is done through a standard *Preventive Maintenance Program* (PMP). Several hundred filling





Elopak's newest filling machine E-PS120A for Pure-Pak® aseptic cartons.

machines are included in this program, which has been developed and improved by Elopak over several years. Zero-settings (optimal settings) for each machine type have been established, standardizing the process within each filling machine category. After service, corrections are submitted through standard procedures where Field Service Engineers gain knowledge from each other and thus optimize the next service at their customer.

There are several benefits gained from the PMP. It is easier to plan the maintenance and the planned downtime needed on the machines. Elopak's Field Service Engineers and the customer can learn from experiences on other filling machines at other sites. There are also potential cost savings due to optimizing the intervals between the maintenance program (and potentially increase lifespan of spare parts), and optimizing efficiency (reduce downtime). In case a retrofit kit is developed for the filling machine type, it is easy to substitute obsolete parts on all relevant filling machines at the next service.

In 2014, we started a project to optimize the cleaning programs on selected filling machine models. We believe that significant environmental savings can be achieved by this type of optimization.

## New aseptic filling machine platform

Our newest filling machine platform for aseptic Pure-Pak® cartons, features a unique modular design for exceptional flexibility in installation, operation and maintenance. The machine requires less floor space with an inside cap applicator, and minimum manpower due to semi-automatic carton feeding, high in-machine storage and high buffer capacity.

The cap-welding is done with ultrasonic energy, thus reducing the energy consumption compared to other aseptic filling machine models. This, in addition to improved bottom sealing and inductive top sealing, leads to a considerable reduction in energy consumption and hence also lower GHG emissions. Another feature of the new machine is a smaller aseptic chamber unit which guarantees a fully aseptic performance with a well proven H<sub>2</sub>O<sub>2</sub> 35 % vapor sterilization system. The machine is currently being further optimized, focusing on the cleaning and sterilization cycle which would further reduce energy and chemical consumption.

Elopak is increasing the focus and priority of this pillar in the coming years, to make sure we can reach our goal of a 25% reduction in GHG emissions for our customers running our equipment.

2020 VISION:

25 %  
reduced  
CO<sub>2</sub>





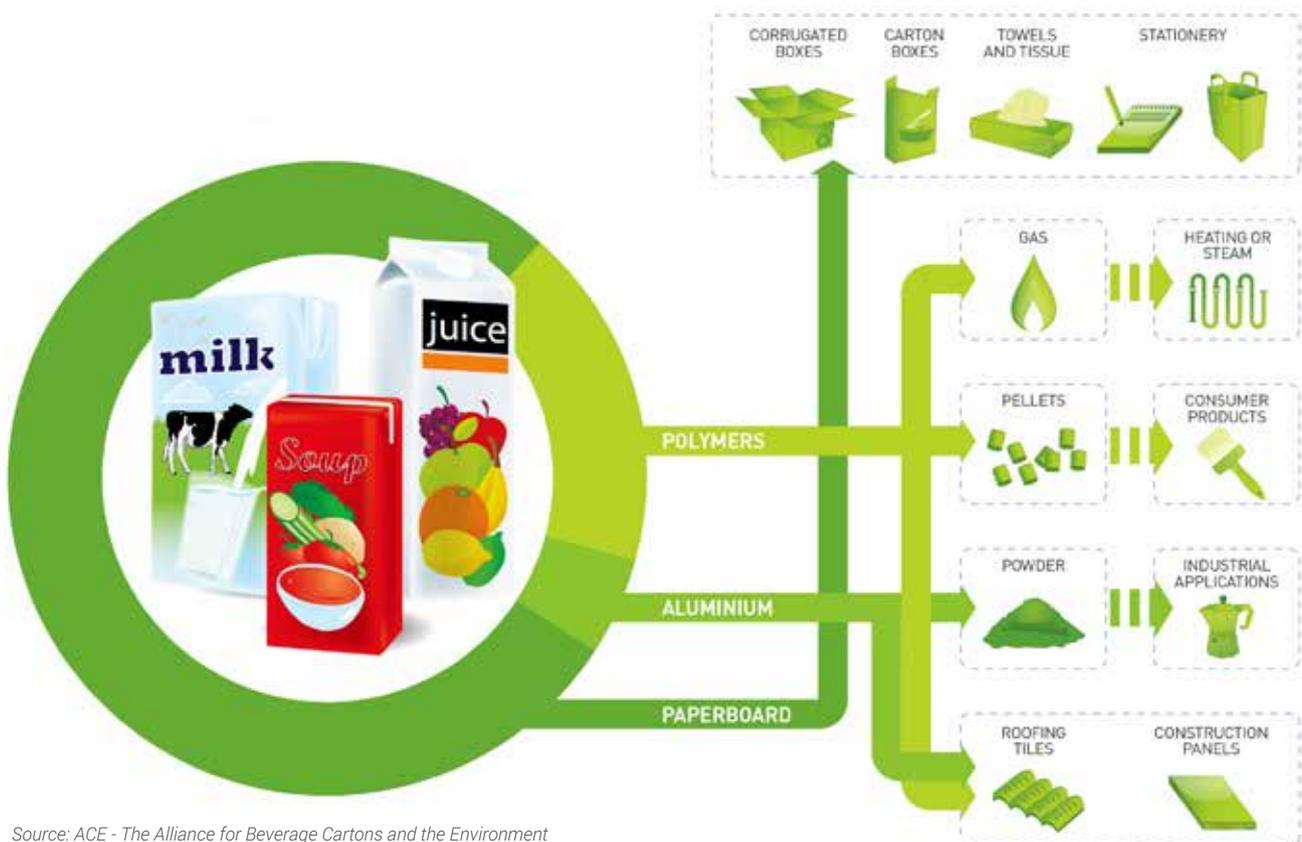
## PILLAR 5: Total Recycling

Our strategy for recycling is two-fold. Within Elopak's premises, we aim for 100% recycling of our internal waste. In the post-consumption phase, we aim for 50% household recycling of beverage cartons by 2020.

### Recycling of household waste

All Elopak cartons are fully recyclable. Once the contents of our cartons have been enjoyed, it is important that the cartons are collected and then recycled. Recycling is beneficial from an environmental point of view, as it diverts valuable materials from landfills, ensures the efficient use of scarce resources and turns waste into new resources and new products. Recycling is a key element of *circular economy* thinking, where resources are kept within the economy, so they can be productively used again and create further value.

After collection, used beverage cartons are sorted and in most cases brought to paper mills for recycling, or in some cases they provide heat or power (energy recovery) during the recycling process. The process for recycling is a water-based re-pulping process, which allows the paperboard



Source: ACE - The Alliance for Beverage Cartons and the Environment





to be easily separated from the other materials. There are many types of products which can be made from the different beverage carton fractions, such as carton boxes, stationery, roofing tiles and construction panels. There are also research and development projects being undertaken to further improve the technology for separating polymers from aluminum.

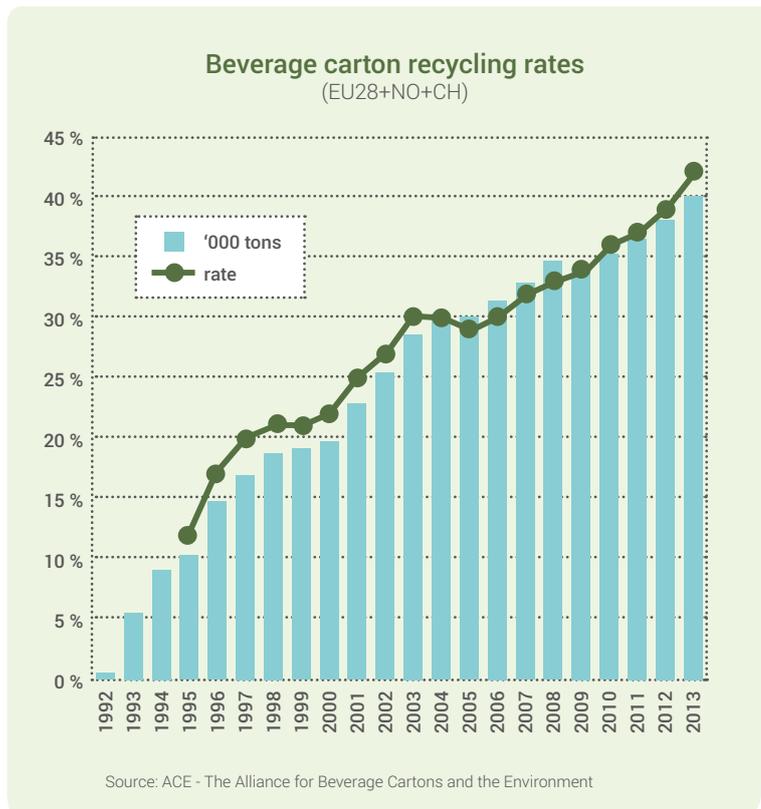
In 2014, an average of **34%** of Elopak cartons sold in Europe and North America were recycled. We are working closely with local authorities and stakeholders to increase the beverage carton recycling rate in the markets we operate. We are working hard to see the beverage carton recycling rate increase further.

The beverage carton recycling rate in Europe has been steadily increasing over the past 20 years. In Europe in 2013, the recycling rate reached **42%**. The total recovery rate (recycling and energy recovery) in 2013 reached 71%.

In the U.S., **54%** of households have access to carton recycling. 48 states now offer carton recycling programs.

We contribute to increased recycling rates through our membership with the industry associations The Alliance for Beverage Cartons and the Environment (Europe) and Carton Council of North America. In some countries in Europe, we are also active in the national recycling organizations.

One example of such multi-stakeholder collaboration comes from the Netherlands. In 2013, a pilot project was set up to investigate the possibilities and costs for beverage carton collection and recycling, taking into account the environmental benefits and the willingness of citizens to cooperate. Based on the positive results from the pilot and the work of HEDRA, the Dutch association for beverage cartons and the environment, the State Secretary for Infrastructure and Environment decided in the summer of 2014 to provide financial compensation to municipalities for the collection of beverage cartons as of 2015. This is a major milestone towards improved beverage carton recycling rates in the Netherlands and demonstrates the circular character of our cartons.



### Industry cooperation to promote beverage carton

Cartons are the renewable, low-carbon and recyclable packaging solutions. Beverage carton manufacturers and board suppliers work together to demonstrate that beverage carton packaging is the smart green choice today and in the future. Some examples of industry cooperation of which Elopak is an active member in North America and Europe include:




### Recycling of internal waste

The bulk of our internal waste is paperboard and carton waste from the production process. In 2014,

99%

of this waste was recycled.

2020 VISION:

Zero waste



## PILLAR 6: Culture and Governance

Elopak's sixth strategic pillar concerns company culture and how the company's governance is including environmental performance of the company and its products. The Elopak mantra has from the start been 'Measure and Manage'. This means that we have concrete measurements of relevant environmental parameters to track the effects of our activities. This pillar includes both measurable issues and more policy issues.



Increased use of video-conferencing has led to better collaboration across the company, better quality meetings and reduced the need for internal travel.





Business travel, by air and road, makes up approximately 10% of Elopak's total GHG emissions. This is a substantial contribution to our emission sources. Video-conferencing is encouraged within the company before considering travel. Since 2012, video-conferencing has increased by 82%. Increased use of video-conferencing has led to better collaboration across the company, better quality meetings and reduced the need for internal travel.

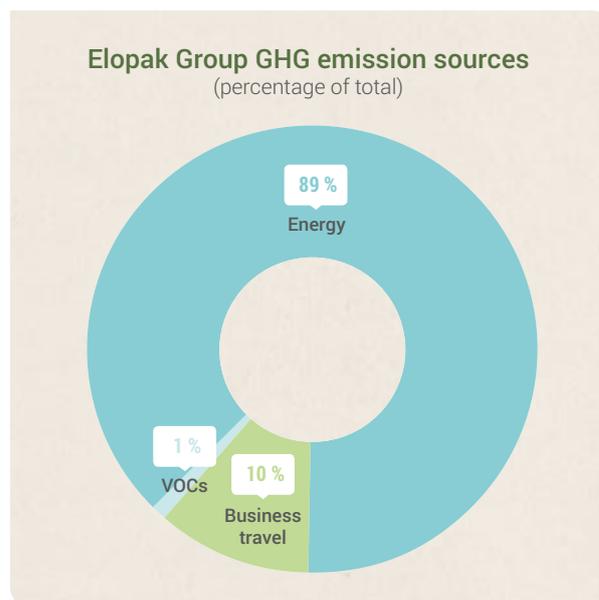
## Governance aspects

When it comes to Governance, Elopak has established a routine for reporting progress to top management quarterly. In these meetings the management group is informed on how the different key performance indicators in the environmental strategy are being met according to the strategy that includes milestones. Further it has been a decided policy to have full transparency of the company's environmental impact. Elopak believes that it is important to follow this strategy to create credibility for its endeavors to minimize environmental impact. Hence, in our annual report, all relevant indicators are reported according to the principles of the Greenhouse Gas Protocol. Any changes to the data have to be documented and explained, so that the Group's own efforts are transparently documented.

## CDP reporting

Elopak has also set a standard of transparency and openness by voluntarily reporting to the world's largest database for environmental information, Carbon Disclosure Project (CDP). For over a decade CDP has worked to tackle climate change. CDP believe that systemic change – a real transformation of the global economic system – is required if we are to achieve the scale of change that will limit global warming and prevent catastrophic climate change. The CDP system has helped move climate change and energy efficiency onto the business radar and into mainstream business thinking.

Each year CDP ranks the companies taking part in the project and Elopak has obtained a B ranking for its openness, its strategy and performance in minimizing its climate impact. A sub-project of CDP is to ask selected suppliers to also report how their products and services impact the GHG emissions of the whole value chain.



Elopak has selected around 20 strategic suppliers to specify their embedded GHG emissions for the products and services provided to Elopak. Elopak also requested more general strategic environmental information and activities to reduce climate impact. This information is evaluated by Elopak and forms a good basis for in-depth discussions with the suppliers on how to cooperate to decrease negative environmental impact.

Elopak is also sharing relevant environmental information with customers that are interested in this value-chain approach.

**GREENHOUSE GAS PROTOCOL**

The Greenhouse Gas (GHG) Protocol sets the global standard for how to measure, manage and report GHG emissions.

**CDP**  
DRIVING SUSTAINABLE ECONOMIES

CDP works to transform the way the world does business to prevent dangerous climate change and protect our natural resources.

2020 VISION:

**Sustainable company**

## Independent assurance report

To the management of Elopak AS

### Scope of Engagement

We have been engaged by the management of Elopak AS to perform an independent limited assurance engagement of Elopak's 2014 Environmental parameters and CO<sub>2</sub> emissions in the 2014 columns presented on pages 30-31 in Elopak's Environmental Report 2014 ("the Report"). We have not performed any procedures relating to the period 2008 to 2012.

### Reporting criteria

As a basis for the Report, Elopak has applied the definitions for Scope 1-3, set by the Greenhouse Gas Corporate Standard as of 2014. These definitions are presented on pages 28 and 29 in Elopak's environmental report under the section "Environmental parameters 2008-2014". We consider these reporting criteria to be relevant and appropriate to review the Report.

### The management's responsibility

Elopak's management is responsible for the environmental reporting, and for selecting information, collecting data for presentation and for preparing the Report in accordance with the applicable reporting criteria.

### The practitioner's responsibility

Our responsibility is to issue an independent limited assurance report on Elopak's Report.

### Assurance standard used and level of assurance

We have performed the assurance engagement in accordance with ISAE 3000, "Assurance engagements other than audits or reviews of historical financial information". The standard requires that we plan and execute procedures in order to obtain limited assurance that causes us to believe that the Report does not, in all material respects, contain wrongful information. The procedures performed in order to obtain limited assurance aim to verify the plausibility of information and probe less deeply than those performed for assurance engagements aimed at obtaining reasonable assurance. Our independent assurance report does not cover the assumptions used by Elopak or whether or not it is possible for Elopak to reach certain future targets described in the report (e.g. goal, expectations and ambitions).

### Assurance procedures for the Environmental Report

Our assurance procedures related to the Report have been planned and performed in accordance with ISAE 3000 (limited assurance). The standard requires that we plan and execute procedures in order to obtain limited assurance on the Report.

Our review has, based on an assessment of materiality and risk, among other things included the following procedures:

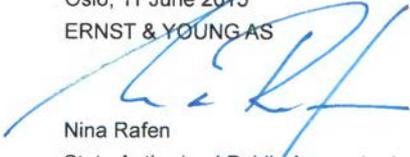
- Obtained and reviewed evidence on a test basis to support the material 2014 CO<sub>2</sub> emissions data presented on pages 30-31 in the Report
- Evaluated the overall presentation of the Report, including Elopak's use of definitions for Scope 1-3, based on the Greenhouse Gas Corporate Standard as of 2014

We believe that our procedures provide us with an adequate basis for our conclusion.

### Conclusion

On the basis of our procedures aimed at obtaining limited assurance, nothing has come to our attention that causes us to believe that the information in the report does not comply with the above stated criteria.

Oslo, 11 June 2015  
ERNST & YOUNG AS



Nina Rafen  
State Authorised Public Accountant

A member of Ernst & Young Global Limited

Photo: ACE (UK)



Photo: ACE (UK)

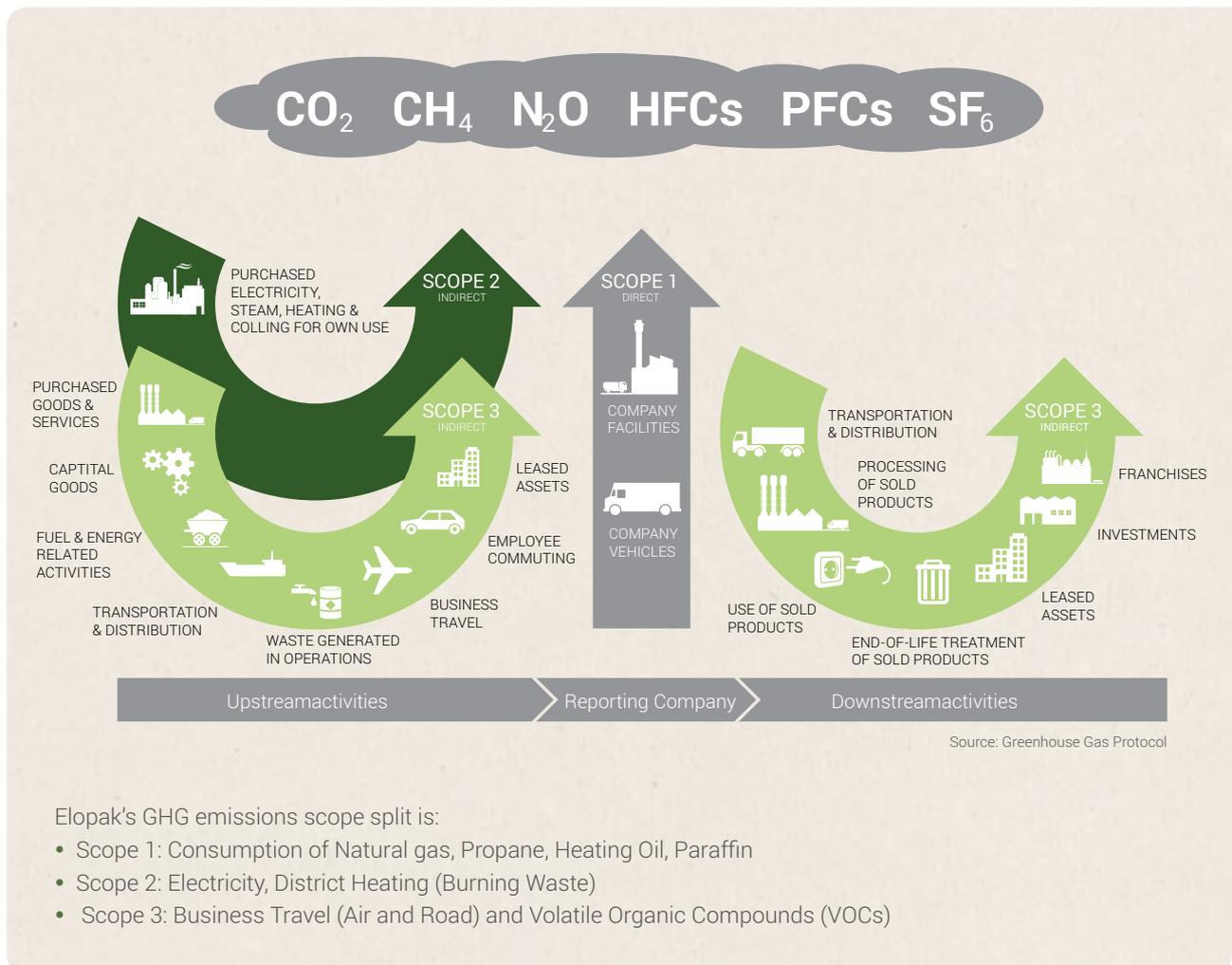


Photo: ACE (UK)



# Environmental Parameters

The following two pages contain Elopak's key environmental data series from 2008-2014. These originate from Elopak's internal reporting system. This shows the development of Elopak's environmental impact per year, as prescribed in the Greenhouse Gas Protocol (2004 Edition). The Greenhouse Gas (GHG) Protocol is a widely used standard for corporate environmental reporting, where a company shall divide its emissions in three scopes:





### Materiality and what we measure

We define our global key performance indicators (KPIs) as:

- GHG emissions from Energy consumption, Business Travel and VOCs (Volatile Organic Compounds from some printing processes).
- Elopak Group Carbon Emission Intensity – CEI (g/CO<sub>2</sub>e per carton produced)
- Energy Intensity from production facilities (kWh consumed per 1000 cartons produced).

### New electricity emission factors

Elopak has had the same electricity emission factors since environmental reporting began in 2008.

These were based on information from the International Energy Agency (IEA) on energy production per country. However in 2014 we have updated our electricity emission factors to better reflect market realities. We do this by introducing electricity emission factors compiled by the UK Department for Environment, Food & Rural Affairs (DEFRA), and aim to update these factors annually from 2014 onwards.

### Purchased Guarantees of Origin for electricity

In 2014 Elopak started phasing in renewable electricity, through the purchase of Guarantees of Origin (GOs). GOs are a guarantee that electricity is produced from a specific renewable energy source at a particular time and place. This has a positive impact on Elopak's greenhouse gas emissions, as energy comprises 89% of Elopak's GHG emissions. The GOs purchased are applicable to European

countries (excluding Serbia, Russia and Ukraine). The GO impact has been calculated pro rata, depending on actual electricity consumption of various Elopak units in 2014.

### Adjustment in air travel reporting

In 2014 a methodological error was discovered in the way return flights were being reported for some entities. This error has been corrected in the system for 2014 and onwards.

### Entities removed from environmental reporting

A production facility for caps in Israel (an Elopak Joint Venture) was sold in 2014. In accordance with GHG Protocol accounting principles, its GHG emissions have been retrospectively removed from all environmental legacy data (back to 2008).

### New reporting entities

The following entities were reporting environmental data for the first time in 2014:

- Filling machine manufacturing plant in Mönchengladbach, Germany
- Carton converting plant in St. Petersburg, Russia

### GHG emissions from internal logistics not included in Scope 3

Under Pillar #3, Logistics, we have included GHG emission information stemming from our European operations. However, the internal logistics emissions are not included in our total Scope 3 split for 2014, as we are still building up baseline information from suppliers.

## Elopak Group (inclusive 100% of partly owned Joint Ventures)\*

KPIs		Total Year									
		2008	2009	2010	2011	2012	2013	2014	2014 Updated electricity factors (Defra)	2014 GO Purchase & Updated factors	2014 vs. 2008
<b>TOTAL CO<sub>2</sub>e EMISSIONS</b>	<b>tons</b>	<b>65 300</b>	<b>64 236</b>	<b>61 774</b>	<b>59 721</b>	<b>58 801</b>	<b>60 906</b>	<b>65 272</b>	<b>62 770</b>	<b>55 468</b>	<b>-15 %</b>
<b>PRODUCED UNITS</b>	<b>Units</b>	<b>11 556</b>	<b>12 476</b>	<b>12 637</b>	<b>12 381</b>	<b>12 226</b>	<b>11 741</b>	<b>13 105</b>	<b>13 105</b>	<b>13 105</b>	<b>13 %</b>
<b>CARBON EMISSIONS PER PRODUCED CARTON</b>	<b>g/CO<sub>2</sub>e per unit</b>	<b>5,65</b>	<b>5,15</b>	<b>4,89</b>	<b>4,82</b>	<b>4,81</b>	<b>5,19</b>	<b>4,98</b>	<b>4,79</b>	<b>4,23</b>	<b>-25 %</b>
<b>ENERGY INTENSITY PER PRODUCED CARTON</b>	<b>kWh/per 1000 units</b>	<b>11,03</b>	<b>11,88</b>	<b>11,74</b>	<b>11,32</b>	<b>11,40</b>	<b>12,15</b>	<b>11,40</b>	<b>11,40</b>	<b>11,40</b>	<b>3 %</b>
Scope 1	tons CO <sub>2</sub> e	12 507	12 073	13 026	11 367	10 601	9 627	10 852	10 852	10 852	-13 %
Scope 2	tons CO <sub>2</sub> e	46 639	46 414	42 960	43 286	43 328	45 545	47 994	45 491	38 190	-18 %
Scope 3	tons CO <sub>2</sub> e	6 154	5 750	5 775	5 068	4 872	5 733	6 426	6 426	6 426	4 %
Total emissions	tons CO <sub>2</sub> e	65 300	64 236	61 760	59 721	58 801	60 906	65 272	62 770	55 468	-15 %
Electricity	tons CO <sub>2</sub> e	44 519	46 243	41 930	42 533	42 403	43 652	47 261	44 758	37 457	-16 %
District heating	tons CO <sub>2</sub> e	2 121	171	1 030	753	925	947	733	733	733	-65 %
Natural gas	tons CO <sub>2</sub> e	10 664	10 349	10 765	9 430	8 652	8 482	7 976	7 976	7 976	-25 %
Propane	tons CO <sub>2</sub> e	734	933	1 062	1 014	971	1 383	2 078	2 078	2 078	183 %
Heating oil	tons CO <sub>2</sub> e	1 098	791	1 199	923	978	708	782	782	782	-29 %
Other energy	tons CO <sub>2</sub> e	11	-	-	-	-	-	16	16	16	-
Total energy emissions	tons CO <sub>2</sub> e	59 147	58 486	55 986	54 653	53 929	55 172	58 846	56 344	49 042	-17 %
Other ex electricity	tons CO <sub>2</sub> e	14 628	12 243	14 055	12 120	11 526	11 520	11 585	11 585	11 585	-21 %
VOCs	tons CO <sub>2</sub> e	1 759	1 473	1 188	989	830	715	768	768	768	-56 %
Travel air	tons CO <sub>2</sub> e	3 620	3 273	3 483	2 867	2 790	3 429	4 400	4 400	4 400	22 %
Travel car	tons CO <sub>2</sub> e	775	1 005	1 104	1 212	1 251	1 590	1 259	1 259	1 259	63 %
Total travel	tons CO <sub>2</sub> e	4 394	4 278	4 587	4 079	4 041	5 018	5 658	5 658	5 658	29 %
<b>Total emissions</b>	<b>tons CO<sub>2</sub>e</b>	<b>65 300</b>	<b>64 236</b>	<b>61 760</b>	<b>59 721</b>	<b>58 801</b>	<b>60 906</b>	<b>65 272</b>	<b>62 770</b>	<b>55 468</b>	<b>-15 %</b>

RESOURCE AND WASTE DATA	Water consumption	m <sup>3</sup>	83 994	100 943	81 541	91 093	93 694	88 381	124 076	124 076	124 076	48 %
	Total paper and board waste	tons	35 274	39 744	42 463	42 885	38 135	40 433	48 291	48 291	48 291	37 %
	Recycling of paper and board waste	tons	34 024	38 177	41 229	41 709	36 968	38 341	47 885	47 885	47 885	41 %
	Incineration of paper and board waste	tons	1 180	1 471	1 222	1 164	1 156	2 080	403	403	403	-66 %
	Landfill of paper and board waste	tons	70	96	12	12	12	12	2	2	2	-97 %
	Solvents / inks	kg	352 993	272 920	257 987	185 445	184 088	185 087	178 916	178 916	178 916	-49 %
	Photochemicals	kg	14 187	12 977	8 365	7 545	7 240	7 118	58 563	58 563	58 563	313 %
	Cleaning towels	kg	153 081	103 425	98 436	105 086	80 281	80 953	85 085	85 085	85 085	-44 %
	Waste oil	kg	12 546	7 246	5 158	4 735	4 553	4 636	11 425	11 425	11 425	-9 %
	Other hazardous waste	kg	42 951	25 276	38 197	22 479	40 186	35 965	119 358	119 358	119 358	178 %
	Total hazardous waste	kg	575 758	421 844	408 143	325 290	316 348	313 759	453 347	453 347	453 347	-21 %
	<b>ENERGY CONSUMPTION CONVERTED TO MWh</b>											
	Electricity	MWh	99 952	108 471	98 710	97 357	100 514	101 791	108 652	108 652	108 652	9 %
	District heating	MWh	6 125	612	3 691	2 698	3 316	3 393	2 627	2 627	2 627	-57 %
	Natural gas	MWh	44 745	51 234	53 293	46 686	42 831	41 988	38 878	38 878	38 878	-13 %
	Propane	MWh	2 661	4 002	4 560	4 350	4 166	5 937	8 914	8 914	8 914	235 %
	Heating oil	MWh	3 651	2 400	3 327	2 276	2 362	2 593	2 866	2 866	2 866	-21 %
	Other energy	MWh	10	-	-	-	-	-	64	64	64	544 %
	Total energy consumption	MWh	157 143	166 719	163 581	153 368	153 190	155 702	162 001	162 001	162 001	3 %
	Air travel short haul	#	2 557	4 075	4 023	3 548	3 837	2 981	4 682	4 682	4 682	83 %
Air travel medium haul	#	2 812	3 516	4 180	3 847	3 688	4 844	5 519	5 519	5 519	96 %	
Air travel long haul	#	795	531	369	186	159	219	510	510	510	-36 %	
Air travel total	#	6 164	8 122	8 572	7 581	7 684	8 044	10 711	10 711	10 711	74 %	

\*2014 electricity emissions for Saudi Arabia were calculated based on production relative to 2013 emissions, due to lack of data

## Elopak 100% owned subsidiaries (production, sales & administration units)

KPIs		Total Year									
		2008	2009	2010	2011	2012	2013	2014	2014 Updated electricity factors (Defra)	2014 GO Purchase & Updated factors	2014 vs. 2008
<b>TOTAL CO<sub>2</sub>e EMISSIONS</b>	<b>tons</b>	<b>47 626</b>	<b>45 356</b>	<b>44 578</b>	<b>42 901</b>	<b>42 956</b>	<b>46 034</b>	<b>50 157</b>	<b>45 763</b>	<b>38 461</b>	<b>-19 %</b>
<b>PRODUCED UNITS</b>	<b>Units</b>	<b>8 046</b>	<b>8 735</b>	<b>8 941</b>	<b>8 813</b>	<b>8 387</b>	<b>8 276</b>	<b>9 293</b>	<b>9 293</b>	<b>9 293</b>	<b>15 %</b>
<b>CARBON EMISSIONS PER PRODUCED CARTON</b>	<b>g/CO<sub>2</sub>e per unit</b>	<b>5,92</b>	<b>5,19</b>	<b>4,99</b>	<b>4,87</b>	<b>5,12</b>	<b>5,56</b>	<b>5,40</b>	<b>4,92</b>	<b>4,14</b>	<b>-30 %</b>
<b>ENERGY INTENSITY PER PRODUCED CARTON</b>	<b>kWh/per 1000 units</b>	<b>12,40</b>	<b>12,89</b>	<b>12,81</b>	<b>12,37</b>	<b>12,94</b>	<b>13,57</b>	<b>12,89</b>	<b>12,89</b>	<b>12,89</b>	<b>4 %</b>
Scope 1	tons CO <sub>2</sub> e	10 086	9 747	10 489	9 189	8 469	7 321	8 893	8 893	8 893	-12 %
Scope 2	tons CO <sub>2</sub> e	32 095	30 588	28 910	29 234	30 212	33 473	35 331	30 937	23 635	-26 %
Scope 3	tons CO <sub>2</sub> e	5 445	5 022	5 166	4 477	4 275	5 240	5 934	5 934	5 934	9 %
Total emissions	tons CO <sub>2</sub> e	47 626	45 356	44 564	42 901	42 956	46 034	50 157	45 763	38 461	-19 %
Electricity	tons CO <sub>2</sub> e	29 974	30 417	27 880	28 482	29 287	31 580	34 598	30 204	22 902	-24 %
District heating	tons CO <sub>2</sub> e	2 121	171	1 030	753	925	947	733	733	733	-65 %
Natural gas	tons CO <sub>2</sub> e	8 586	8 802	9 055	7 896	7 155	6 641	6 542	6 542	6 542	-24 %
Propane	tons CO <sub>2</sub> e	607	520	661	689	708	1 133	1 818	1 818	1 818	200 %
Heating oil	tons CO <sub>2</sub> e	882	425	773	604	606	494	532	532	532	-40 %
Other energy	tons CO <sub>2</sub> e	11	-	-	-	-	-	-	-	-	-100 %
Total energy emissions	tons CO <sub>2</sub> e	42 181	40 335	39 399	38 423	38 681	40 795	44 224	39 829	32 528	-23 %
Other ex electricity	tons CO <sub>2</sub> e	12 207	9 918	11 519	9 942	9 395	9 215	9 626	9 626	9 626	-21 %
VOCs	tons CO <sub>2</sub> e	1 258	875	655	469	345	320	352	352	352	-72 %
Travel air	tons CO <sub>2</sub> e	3 491	3 231	3 443	2 830	2 745	3 394	4 363	4 363	4 363	25 %
Travel car	tons CO <sub>2</sub> e	697	916	1 067	1 178	1 184	1 526	1 219	1 219	1 219	75 %
Total travel	tons CO <sub>2</sub> e	4 187	4 147	4 511	4 008	3 930	4 920	5 582	5 582	5 582	33 %
Total emissions	tons CO <sub>2</sub> e	47 626	45 356	44 564	42 901	42 956	46 034	50 157	45 763	38 461	-19 %

RESOURCE AND WASTE DATA	Water consumption	m <sup>3</sup>	41 554	38 750	33 825	36 850	42 200	44 000	49 659	49 659	49 659	20 %
	Total paper and board waste	tons	26 777	30 168	33 075	32 566	29 401	31 091	38 084	38 084	38 084	42 %
	Recycling of paper and board waste	tons	25 532	28 611	31 853	31 402	28 245	29 011	37 679	37 679	37 679	48 %
	Incineration of paper and board waste	tons	1 180	1 471	1 222	1 164	1 156	2 080	403	403	403	-66 %
	Landfill of paper and board waste	tons	66	86	-	-	-	-	1	1	1	-98 %
	Solvents / inks	kg	181 146	134 430	139 587	93 645	77 118	44 039	31 055	31 055	31 055	-83 %
	Photochemicals	kg	11 962	9 662	5 760	5 760	5 784	6 423	57 900	57 900	57 900	384 %
	Cleaning towels	kg	38 306	32 538	21 763	33 627	25 628	28 194	14 051	14 051	14 051	-63 %
	Waste oil	kg	3 322	4 877	4 017	3 079	2 529	2 036	9 395	9 395	9 395	183 %
	Other hazardous waste	kg	42 951	25 276	38 197	22 479	40 186	35 965	119 358	119 358	119 358	178 %
	Total hazardous waste	kg	277 687	206 783	209 324	158 590	151 245	116 657	231 759	231 759	231 759	-17 %
	<b>ENERGY CONSUMPTION CONVERTED TO MWh</b>											
	Electricity	MWh	70 792	78 857	71 935	71 407	74 228	77 343	83 056	83 056	83 056	17 %
	District heating	MWh	6 125	612	3 691	2 698	3 316	3 393	2 627	2 627	2 627	-57 %
Natural gas	MWh	34 457	43 573	44 827	39 089	35 422	32 874	31 784	31 784	31 784	-8 %	
Propane	MWh	2 115	2 233	2 839	2 959	3 038	4 862	7 799	7 799	7 799	269 %	
Heating oil	MWh	2 860	1 558	2 240	1 595	1 561	1 808	1 949	1 949	1 949	-32 %	
Other energy	MWh	10	-	-	-	-	-	-	-	-	-100 %	
Total energy consumption	MWh	116 358	126 833	125 532	117 749	117 565	120 280	127 215	127 215	127 215	9 %	
Air travel short haul	#	2 437	4 019	3 995	3 539	3 819	2 961	4 663	4 663	4 663	91 %	
Air travel medium haul	#	2 669	3 442	4 127	3 796	3 656	4 809	5 458	5 458	5 458	104 %	
Air travel long haul	#	770	535	364	180	149	215	509	509	509	-34 %	
Air travel total	#	5 876	7 996	8 486	7 515	7 624	7 985	10 630	10 630	10 630	81 %	



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We appreciate our cooperation in this area and  
Elopak's strong customer focus.

**Taco Kingma,**  
Manager Sustainable Business FrieslandCampina



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