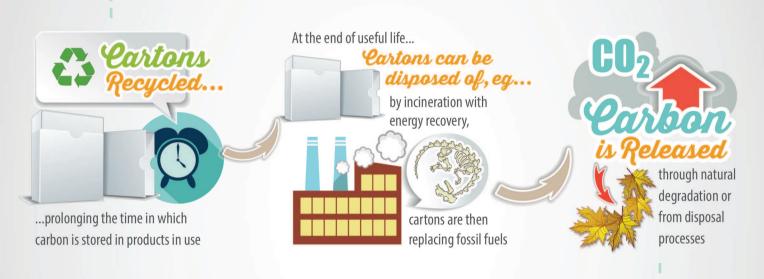
# The Carbon Cycle Role of cartonboard's natural raw material







## **Forests and Cartonboard**

In Morthern Europe...



...the main species of tree used for paper and board production are Birch, Pine and Spruce. Most of the timber used in the industry...



...is from European Forests. Most of the rest comes from



European Forests...



...provide fibre needed on a sustainable basis.



of the industry's raw materials are sourced in Europe from responsibly managed forests.

Forest area in Europe is increasing not decreasing...

European Forests have been growing by over 1,500 Football Pitches every day

About 37% overall of the land is forested.

The Paper & Board Industry...



Uses only parts of a Tree...



The small diameter tops of large trees and the round sections of the trunks which are removed in the saw mills (saw mill waste).

NO Tropical Rain Forests used or destroyed...



...in order to produce paper and board. Wood from tropical rain forests is not used as it is not technically suitable.

# **The Carton Industry's Position on Carbon Footprint - fossil and biogenic carbon**

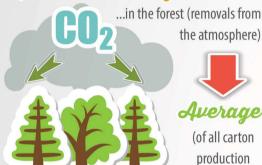


Growing Trees store and capture Carbon... A beneficial link...

When the wood fibre is processed into cartons, the carbon continues to be stored in the cartons. Sustainable Forest Management is an important part of the beneficial relationship between forest and climate.



Met carbon sequestration...



the atmosphere)



(of all carton production in Europe)

of biogenic carbon



The European industry's

Carbon Footprint (cradle-to-gate) is



of carbon dioxide (and equivalents) produced for each tonne of cartonboard which is converted.



for the carbon sequestration of their raw material



be credited against carbon dioxide

emitted during the cartons' life cycle.



In a cradle-to-gate approach, the emissions of 885kg/tonne fossil CO<sub>2</sub>e is significantly compensated by the figure of -730 kg biogenic CO<sub>2</sub> seguestration.

### The Carbon benefits of recycling

### When paper is recycled...

...the carbon stored in the paper product is prevented from going back to the atmosphere...



that originated from sustainable forestry in the value chain.

**Thus**, sequestration in paper products is substantially prolonged by recycling.



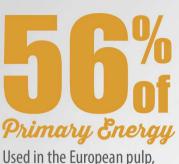
#### The carbon benefits of recycling



Also include allowing increased carbon to accumulate in the forest and reducing the methane released from landfills.



## **Energy USC** Leader in Renewable Energy



Used in the European pulp, paper and board industry is

**Biomass** based



Our Industry

is the largest producer and consumer of

**Biomass based** energy

of non-renewable of the EU total

energy sources

**Such** as fossil-based oil, coal or gas

Our Industry

is more carbon efficient...

Down by PER TONNE

of product compared to 1990



**Have** installed



**Avoiding** use

combined heat and power (CHP) plants



## **Use of Water**

#### Water use in cartonboard production





Used to heat the process equipment, including the drying cylinders on the cartonboard machine

## **Eleaning and Sealing**

Much of the fresh water required is used for cleaning and sealing water in machinery

#### **Water Treatment**

#### Mechanical Treatment

Discharged water is channelled into ponds where particles, mainly fibres, sink to the bottom and are removed

### Biological Treatment



Organic substances in the discharged water are broken down with the aid of micro-organisms, similar to the natural process

#### **Chemical Treatment**

Effluent is treated with chemicals that cause contaminants to precipitate after which they are removed mechanically

### Water is usually taken from a nearby surface source such as...



The Trend... over 2 decades

Peduction
reduced fresh water
withdrawal by 20%
in total volume.



of the water used in the industry is cleaned and reused on site.



returned to the environment.

# **Recovery and Recycling**

**Recycling Cartons** 





...can be recycled by reprocessing in a mill

recovered fibre is then used to make cartonboard



or another paper or board product.

they can either be composted, and processed

as "organic recycling"...

...or energy recycled in a energy-from-waste incinerator if...



...Recycling not viable

### For Recycling to happen...

... Used cartons are collected and sent to a mill. An infrastructure





is required to The Flome collect them from the home or they are taken to a collection location.

#### The main sources of all paper collection

From households

From trade and industry

From offices

### Increasing collections from the Home



Separate collection increases the quality of the recovered paper and it's recyclability.

### Diverting more paper and board from landfill sites...



...to separate collection for recycling makes an important contribution to achieving the EU's goal of recycling 50% of household waste by 2020.

#### Paper and board is the most recycled packaging material in the EU



Recycling Rate

based on 2011 data from the Confederation of Paper Industries.



made from recycled cartonboard.

#### Increasing the recycling rate

## The European Paper Industry...

... achieved its voluntary goals to increase the recycling rate from...

an impressive

And the Trend continues



**European Recovered Paper Council** 

Recycled paper in Europe is 1.5 times higher than in 1998.