



EUROPEAN
CARTON MAKERS
ASSOCIATION

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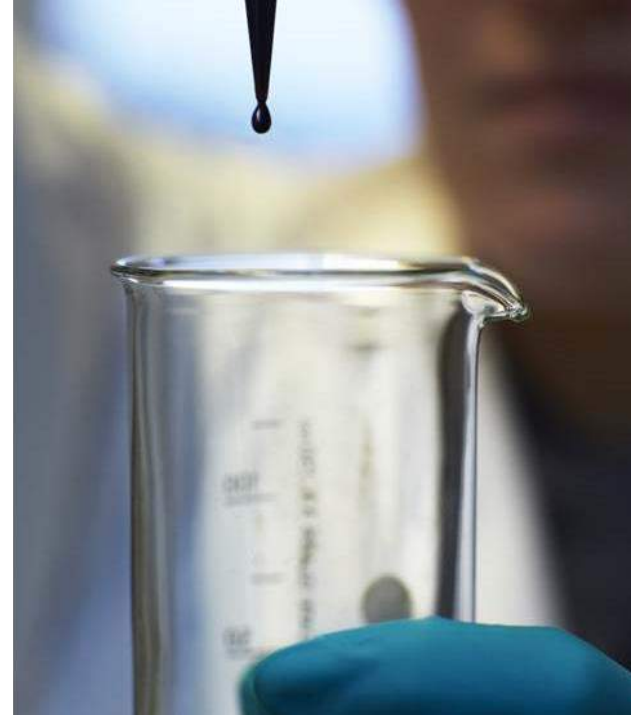
ENVIRONMENTAL DATA AND CARBON FOOTPRINT FOR THE EUROPEAN CARTON PACKAGING SECTOR

Summary of the work

April 2020

Research Institutes of Sweden

BIOEKONOMI



About RISE (Research Institutes of Sweden)

Research, development and consulting organisation

>2,700 employees and >€30m turnover

UK office provides sustainability analysis for the pulp & paper and packaging industries

Working with trade associations and industry



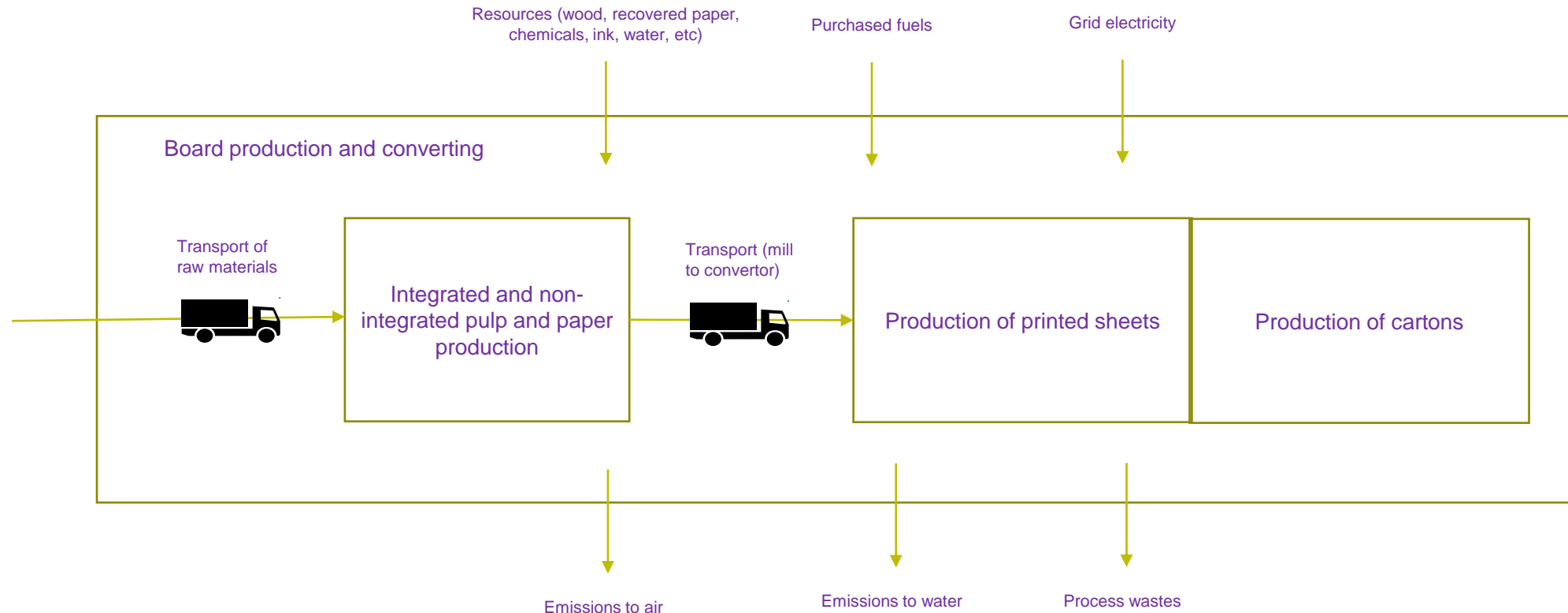
Supporting the carton sector with sustainability data

Two aspects to the support we have provided

1. Environmental data for the production of cartonboard and its conversion into cartons
2. The carbon footprint of carton packaging 2019

Environmental Database for Cartonboard and Carton Production

- A “gate-to-gate” analysis
- Data collected from mills and convertors across Europe



Environmental Database for Cartonboard and Carton Production

Why?

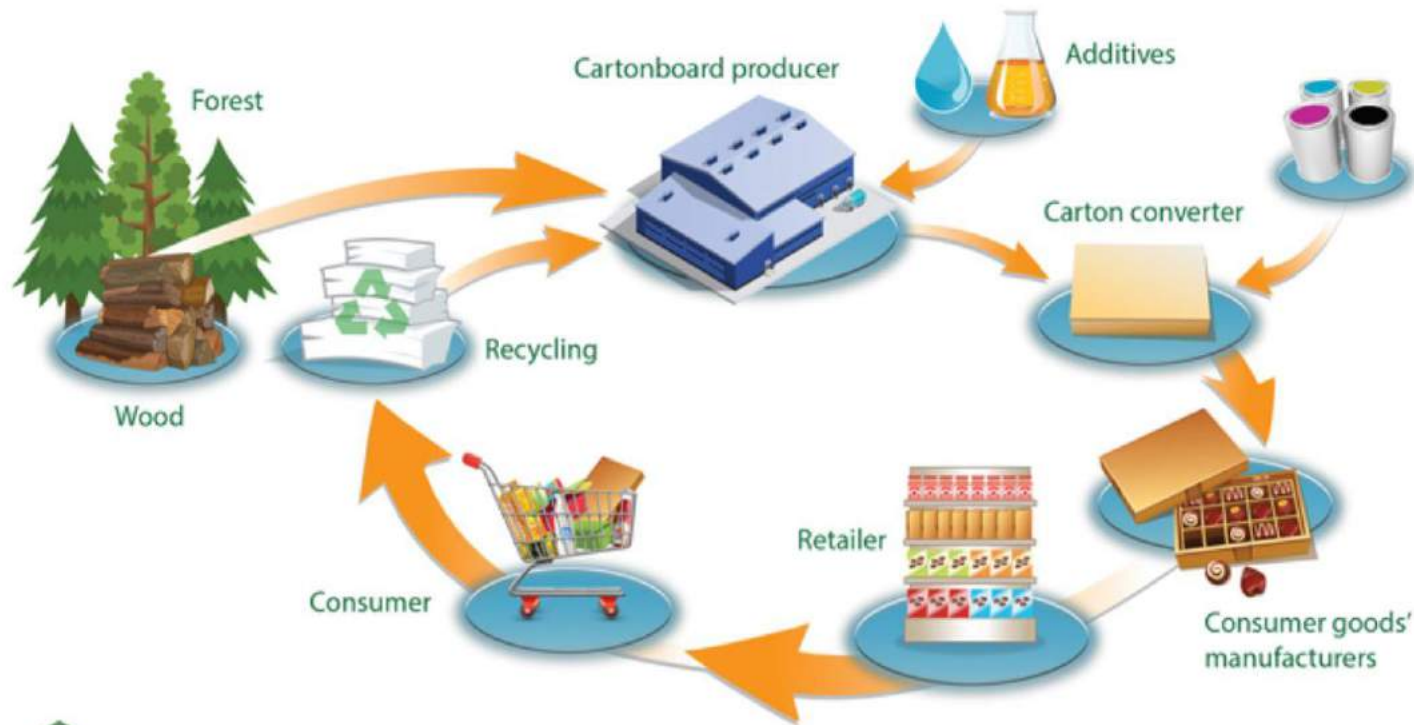
- Drives environmental improvement
 - Identify and monitor trends
 - Benchmarking
- Transparency - provide data for stakeholders

Understanding different terms

- Life cycle inventory (LCI) – a long list of resources, used in the process and of emissions and wastes coming out of the process
- Life cycle assessment (LCA) – tries to make sense of this long list by linking items to environmental impacts. E.g. contributing to:
 - Climate change
 - Acid rain
 - Pollution of water ways
 - The “ozone hole”
 - Air pollution
- Carbon footprint – a sub-set of a LCA focused only on climate change

What contributes to the carbon footprint of cartons?

Cartonboard Life Cycle



Greenhouse gas emissions = GHGs
(*kgCO₂ equivalents*)

- Fossil GHGs – from burning fossil fuels
- Biogenic GHG emissions – from burning biofuels and materials or from biodegrading paper and board
- Biogenic GHG removals – as vegetation grows it removes CO₂ from the atmosphere

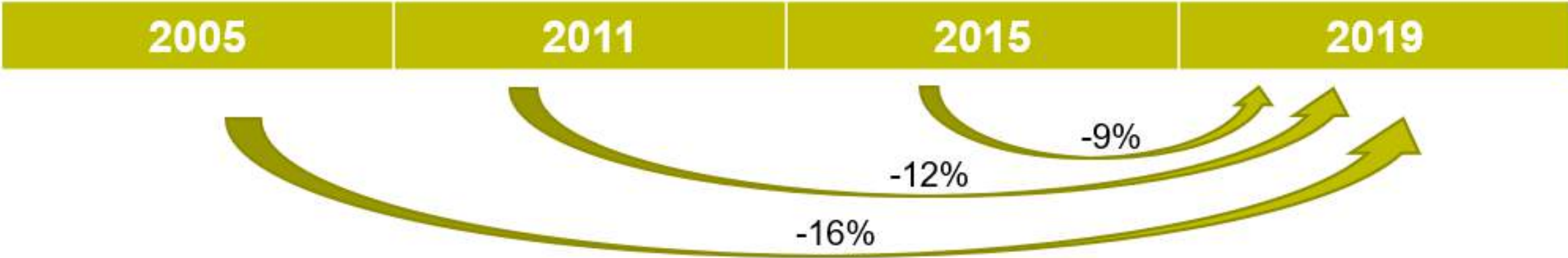
Results of carbon footprint study, 2019

- The cradle-to-grave carbon impact has been calculated at 326kg CO₂equivalents per tonne of cartons:

Fossil GHG emissions	Biogenic GHG emissions	GHG removals	Direct land-use	Total
1,025 kgCO ₂ e	1,001 kgCO ₂ e	-1,708 kgCO ₂ e	9 kgCO ₂ e	326 kgCO₂e

- But remember:
 - A high proportion of the carbon contained in the cartonboard when it is first placed on the market is carried through to the life cycle of subsequent products
 - The carbon contained in these recovered fibres is passed on to other products
 - Eventually, recycling of the fibres is no longer viable and they will be sent for energy recovery or landfill, and carbon will be released to the atmosphere.

How has the carbon footprint developed over time?



Conclusions

- Cartons are a low carbon, circular and bio-based packaging solution
- Calculating the life cycle inventory and carbon footprint contributes evidence to demonstrate this



FOR FURTHER QUESTIONS CONTACT

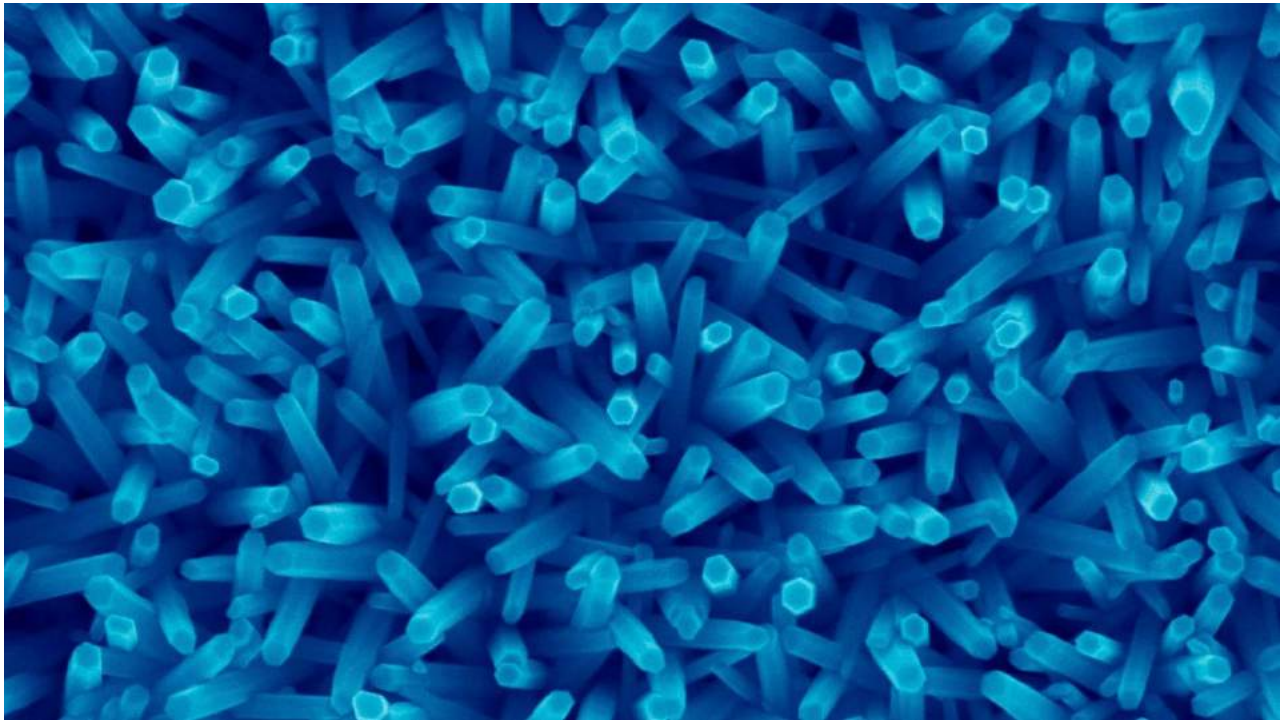
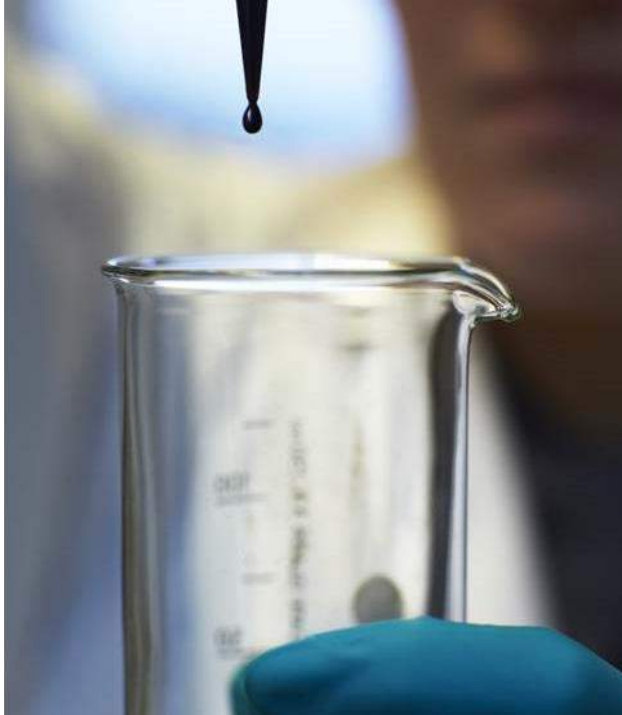
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Questions?

Your questions will now be answered on a first come, first answered principle.

Please use the Q&A button in the control panel.

