



# Reducing the carbon footprint of pharma packaging by optimized material choices

**Christophe Baudry**  
Sales Director,  
Brand Owners  
Beautycare &  
Healthcare

# Metsä Board – the leading producer of premium fresh fibre paperboards

**#1** Folding boxboards and white kraftliners in Europe  
Coated white kraftliners globally

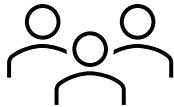
## Our customers

are brand owners, retailers, converters, corrugated box manufacturers and merchants

We deliver to approximately

**100** countries

**2,300**  
employees



Sales in 2023

EUR **1.9** billion

Paperboard capacity\*

**2.3** million tonnes

Pulp and BCTMP capacity

**1.7** million tonnes

\*) Includes the capacity additions in 2023, total of 240,000 tonnes



03/12/2024



# We work to **mitigate climate change**

BY THE END OF

# 2030

**METSÄ BOARD**

**mills** will not use any fossil energy.

**products** will be made entirely from fossil-free materials.

**90%** of our total energy consumption is already based on fossil-free energy (2023).

The Science Based Targets initiative has approved our emission reduction targets as consistent with actions required to meet the Paris Agreement goal to limit global warming to 1.5°C.

# Pharma companies are committed to fossil CO<sub>2</sub> reduction

- Pharma companies are looking for ways to reduce the emissions caused by their operations
  - Emissions' reductions are needed in companies' own operations in their purchased energy but also in the pharma industry's value chain
- Safety regulations can often limit primary pharma packaging to substrates that provide impermeable barriers (such as plastic or metal), which makes it imperative to explore sustainability gains with secondary packaging.



# Impact of value chain (scope 3) emissions

- Value chain, Scope 3, plays a big role also in pharma companies' emissions' target setting, typically including raw materials used in brand packaging
- Metsä Board's 2030 fossil free targets help customers reduce their carbon footprint. However, we can do more already today:



We can offer solutions reducing carbon footprint of packaging and contribute to brand owner's carbon emission reduction targets



# Two major factors influencing CO<sub>2</sub> footprint of paperboard packaging

1

## Fossil or non-fossil-based energy

Nordic fresh fibre paperboard production uses mainly renewable and fossil free energy

In many other regions of the world, the main energy sources are still fossil-based

2

## Efficient material use, lightweighting

Using less material to produce a required type of packaging

Less weight to be transported throughout the supply chain, with lower transportation emissions

Less waste after the product use

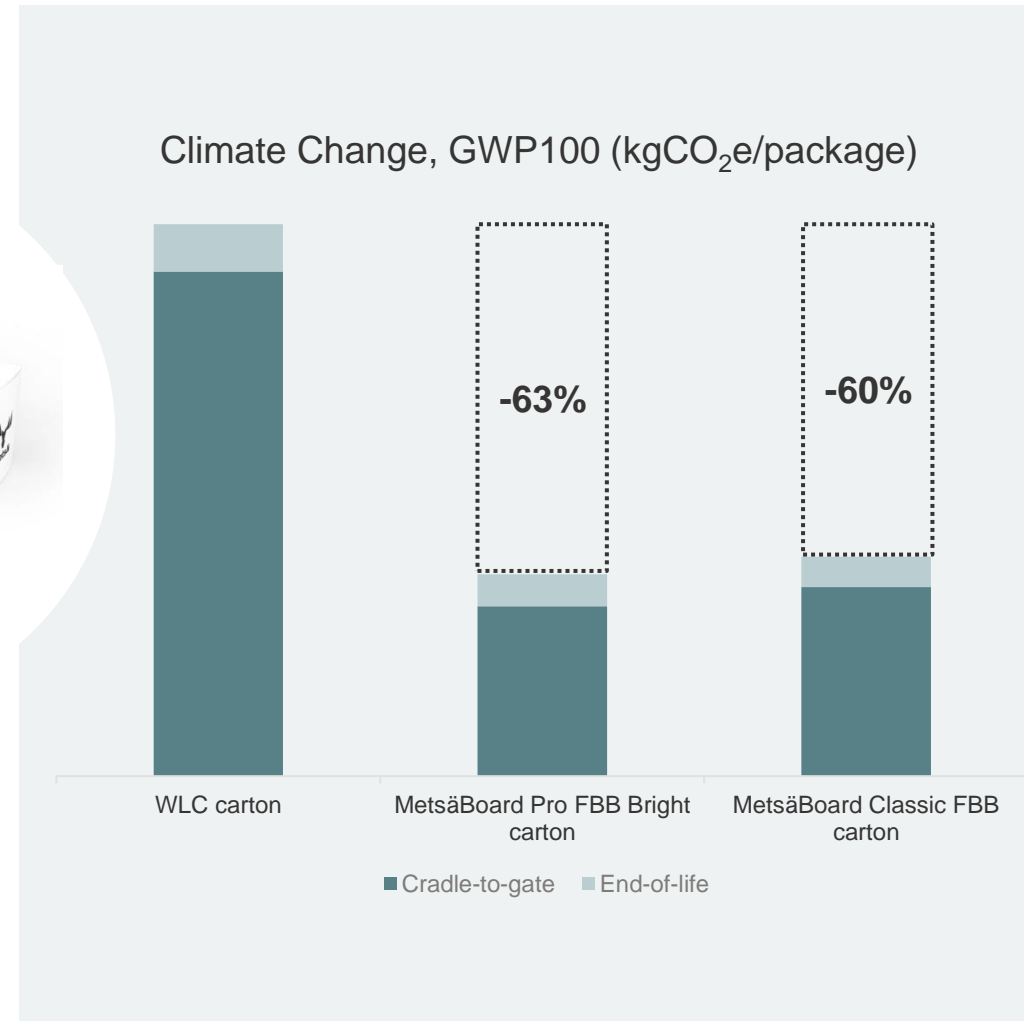


# Carbon footprint assessments

# Switching from white lined chipboard to Metsä Board's folding boxboard can reduce carbon footprint over 60%

Cradle-to-gate + EoL impacts of a carton made of MetsäBoard Classic FBB and MetsäBoard Pro FBB Bright are between 60 to 63% lower than a carton made of white lined chipboard representative of European market due to

- 33-35% lighter paperboard and packaging with comparable function (cross directional stiffness)
- High share of fossil free energy in paperboard production
- The production of white-lined chipboard tend to rely on natural gas as a fuel source



Climate Change impact methodology: EF3.1 Climate Change [kg CO<sub>2</sub> eq.]  
The process of converting of paperboard to carton and downstream transportation is excluded.

MetsäBoard Pro FBB Bright and MetsäBoard Classic FBB primary data from 2022, secondary data from LCA for Experts and ecoinvent 3.8. Based on EPD PCR for Processed Paper and Paperboard. WLC (RER: White-lined chipboard (WLC), integrated mill, cut-off, Sphera LCA for Packaging) EoL scenarios for carton 75% recycled, 10% incinerated, 8% composted, 7% landfilled. Recycling rates are based on PEFCR Guidance Annex C (CFF\_Default\_Parameters\_March2018)



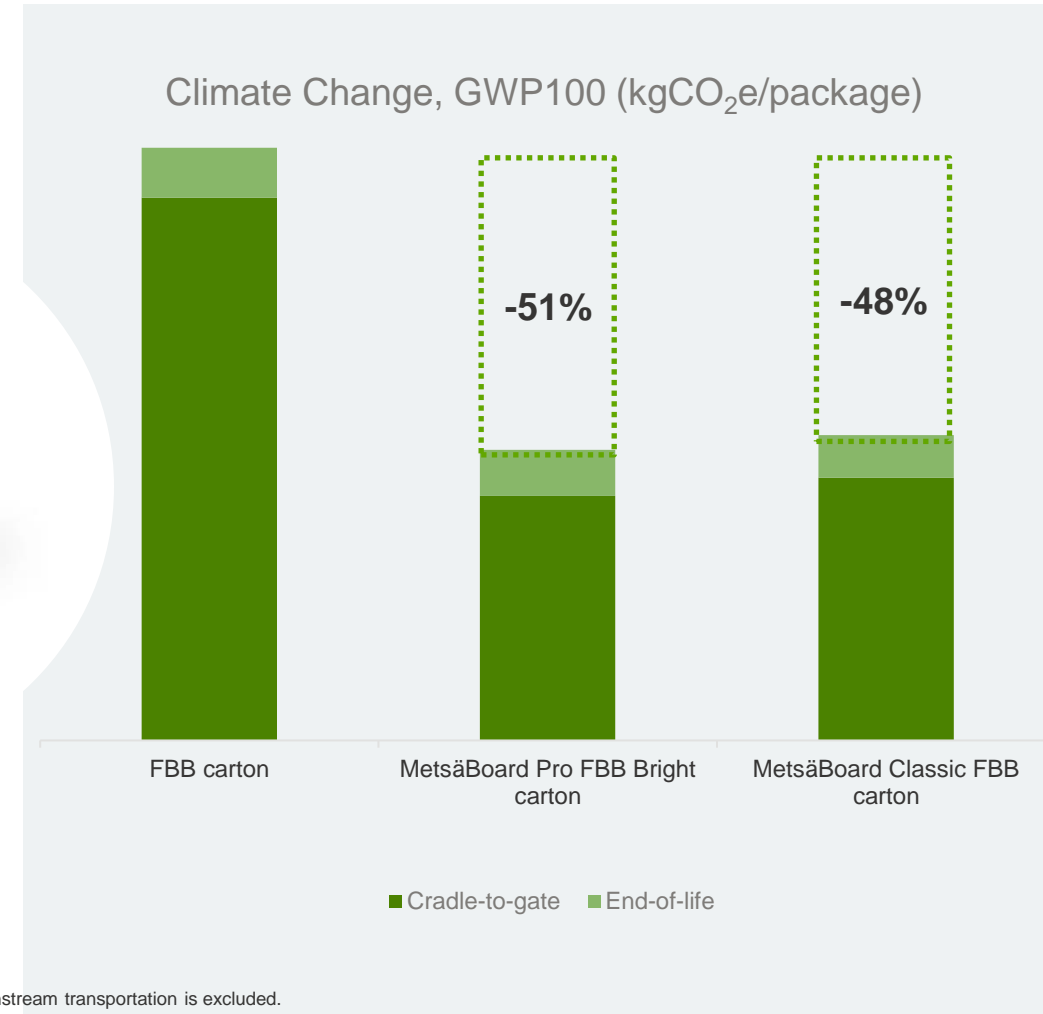


# Switching from market folding boxboard to Metsä Board's folding boxboard can reduce carbon footprint over 50%

Cradle-to-gate + EoL impacts of a carton made of MetsäBoard Pro FBB Bright and MetsäBoard Classic FBB are between 48 to 51% lower than a carton made of folding boxboard representative of European market due to



- 9-15% lighter paperboard and packaging with comparable function (cross directional stiffness)
- High share of fossil free energy in paperboard production
- The production of CTMP used in the production of folding Box Board is electricity intensive process, this can be mitigated by the procurement of fossil free electricity



Climate Change impact methodology: EF3.1 Climate Change [kg CO<sub>2</sub> eq.] The process of converting of paperboard to carton and downstream transportation is excluded.

MetsäBoard Pro FBB Bright and MetsäBoard Classic FBB primary data from 2022, secondary data from LCA for Experts and ecoinvent 3.8. Based on EPD PCR for Processed Paper and Paperboard.

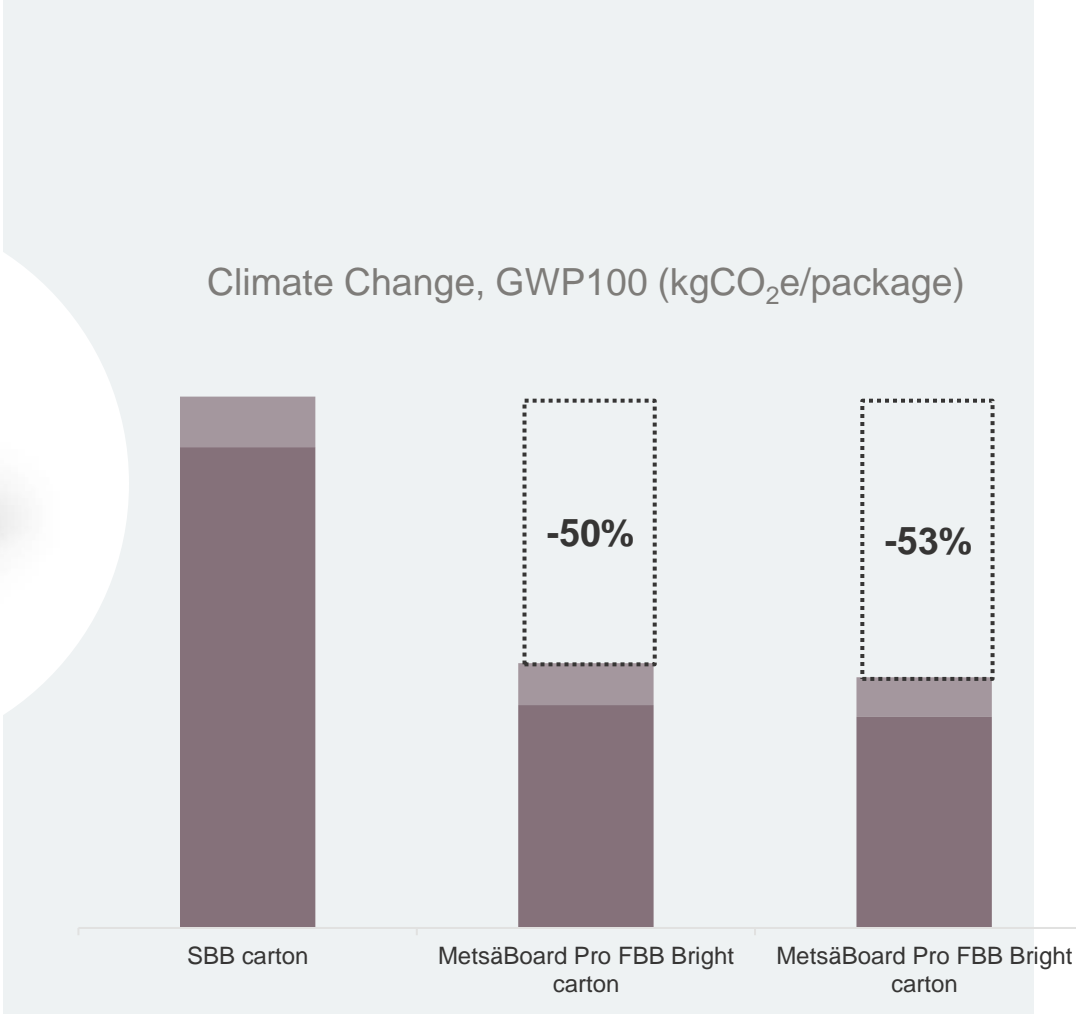
FBB (RER: Folding Box Board (FBB), production mix, Sphera LCA for Packaging)

EoL scenarios for carton 75% recycled, 10% incinerated, 8% composted, 7% landfilled. Recycling rates are based on PEFCR Guidance Annex C (CFF\_Default\_Parameters\_March2018)

# Switching from solid bleached board to Metsä Board's folding boxboard can reduce carbon footprint over 50%

Cradle-to-gate + EoL impacts of a carton made of MetsäBoard Pro FBB Bright are between 50 to 53% lower than a carton made of solid bleached board representative of European market due to

- 17-22% lighter paperboard and packaging with comparable function (cross directional stiffness)
- High share of fossil free energy in paperboard production
- The production of SBS relies on chemical pulp where fuel mix used impacts heavily in climate change results



Climate Change impact methodology: EF3.1 Climate Change [kg CO<sub>2</sub> eq.].  
The process of converting of paperboard to carton and downstream transportation is excluded.

MetsäBoard Pro FBB Bright primary data from 2022, secondary data from LCA for Experts and ecoinvent 3.8.  
Based on EPD PCR for Processed Paper and Paperboard  
SBB (Sphera LCA for Packaging, RER: Solid Bleached Board (SBB), production mix)  
EoL scenarios for carton 75% recycled, 10% incinerated, 8% composted, 7% landfilled. Recycling rates are based on PEFCR Guidance Annex C (CFF\_Default\_Parameters\_March2018)



# Key takeaways

1

We can provide our customers with carbon footprints of our paperboards to

- ▶ Show our progress towards fossil free mills by the end of 2030
- ▶ Help our customers with their carbon reduction targets

2

Metsä Board's lightweight folding boxboards are made using wood fully traceable to sustainably sourced forest origins

Our paperboards are made in resource-efficient manufacturing processes using a high share of fossil-free energy, which enables a lower carbon footprint

- ▶ This helps brands create packages that are **lighter** than those made with conventional paperboard while retaining the **durability and functional properties** of heavier grades



# Questions & answers