Graphic Packaging INTERNATIONAL

Plastic to Paperboard Packaging Migration

Philipp Eissner

Business Development & Innovation Manager









© 2024 Graphic Packaging International, LLC.

A world leader in **sustainable consumer packaging**

$9.4B
2023 Sales
NYSE: GPK

100+ years
operating history

Packaging life's everyday moments



- Food
- Foodservice
- Beverage
- Household products
- Healthcare & Beauty

~3000 patents

Packaging primarily made of **renewable** or **recycled materials**

23K+ **employees** worldwide



50% **diversity** within executive leadership

Leader in safety performance[1]



Global network

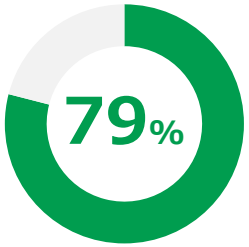
100 Packaging facilities
6 Paperboard manufacturing facilities
8 Innovation centers

[1] AF&PA 2022 Benchmark Data

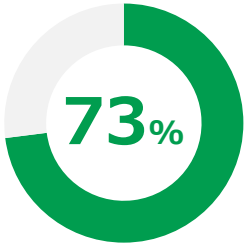
May 2024

© 2024 Graphic Packaging International, LLC.

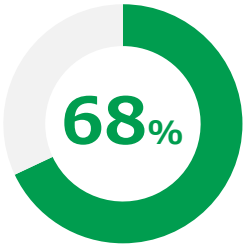
Consumers are increasingly concerned about the impact their purchasing decisions have on the environment



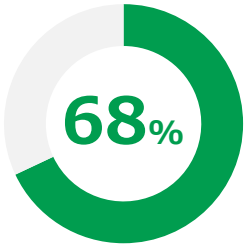
Are looking for products in sustainable packaging[1].



of Gen Z shoppers are willing to pay more for sustainable products[2].



Agree that paperboard packaging is part of the environmental solution[3].



Perceive paperboard packaging to be ‘extremely’ or ‘very’ sustainable[4].



1. Buying Green Report. Trivium Packaging. 2023.
2. Gen Z Shoppers Demand Sustainable Retail. First Insight. January 2020
3. Isobar Attitude and Usage Tracking. Paper and Packaging Board. June 2022.
4. Sustainability in Packaging: Inside the minds of global consumers. McKinsey & Company. August 2023.

© 2024 Graphic Packaging International, LLC.

Retailers and brand owners seek to address consumer expectations, comply with packaging regulations and achieve sustainability goals

Retailers

Tesco

Committed to ensuring all packaging materials are fully recyclable by 2025.

Aldi

By 2025 plastic packaging will be reduced by 50%.

Morrisons

Eliminate unnecessary and problematic single-use plastic packaging items.

Brand Owners

Mondelez

100% packaging designed to be recyclable by 2025.

L'Oréal

Reducing the amount of packaging used for its products by 20% by 2030.

Heineken

Remove consumer facing and single-use plastic from our packaging.

Legislators



EU Green Deal

Packaging and Packaging Waste Directive (PPWR)

Single-Use Plastics Directive (SUPD)

Loi AGEC

and many more...

© 2024 Graphic Packaging International, LLC.

Paperboard packaging innovation isn’t just about plastic replacement



Shelf-life



Convenience



Functionality



Circularity



Protection



Operational Efficiency



Cost Effectiveness



Regulatory Conformance

© 2024 Graphic Packaging International, LLC.

There are plastic replacement opportunities across a wide range of products and markets



Food at home



Snacking



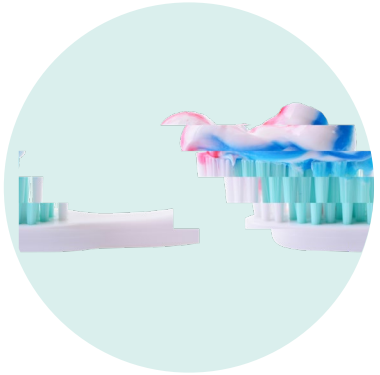
Food away from home



Beverages



Pet care



Oral care



Personal care



Home care



Beauty



Healthcare

© 2024 Graphic Packaging International, LLC.

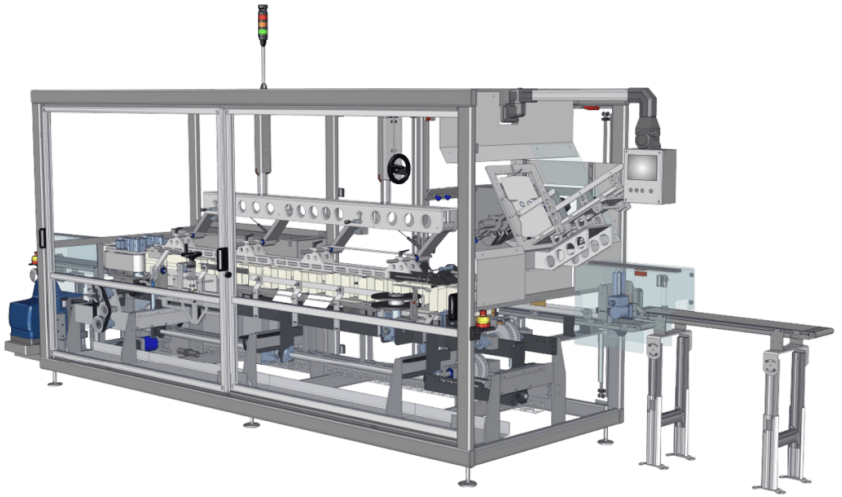
Opportunities for plastic replacement cover a wide spectrum of complexity, automation, and investment

Short-term implementation
Potential to run on existing machinery

Medium-term implementation
Modified current machinery

Medium/long-term implementation
Modified current or new established machinery

Long-term implementation
Bespoke machinery



© 2024 Graphic Packaging International, LLC.

Trays for fruit & vegetables, chilled meat & fish, ready meals, confectionery, and bakery

Challenge	Solution (Short-term)
Reduce plastic	Minimum plastic usage for maximum product safety
Meet local recycling guidelines e.g. OPRL*	Plastic content 10% or below without increasing fibre content
Maintain or enhance shelf-life	Tailored thin barrier and sealing layer(s)
Differentiate entry level, core and premium ranges	Tiered approach through selection of tray type and paperboard or print type







© 2024 Graphic Packaging International, LLC.

* OPRL (On-Pack Recycling Label) is a not-for-profit company offering a Certified as Recyclable scheme in the UK.

Multipacks for beverage and non-beverage applications

Challenge	Solution (Medium-term)
Eliminate plastic rings and shrink film	Paperboard clips, wraps and fully enclosed cartons
Perform through the supply chain	High tear resistance and durability for intense usage
Perform in refrigerated conditions	High wet strength and moisture resistance
Differentiate entry level, core and premium ranges	Multiple constructions with different material usage and features



© 2024 Graphic Packaging International, LLC.

Canisters for coffee, baby formula, confectionery, vitamins and more

Challenge	Solution (Medium/long-term)
Replace rigid plastic tubs and flexible pouches	High-strength multi-layered paperboard options
Stable solution to suit a range of applications	Range of medium to high barriers and constructions for high durability
Reliable convenience that performs for every use	Tight fit paper closure with click in function
Efficient integrated machinery solution	CO_2 savings with flat components formed on filler's site





© 2024 Graphic Packaging International, LLC.

Cartons for laundry detergent tabs

Challenge	Solution (Long-term)
Child-proof but intuitive for adults to open	Intense two-hand use, multinational CRC qualification process passed
Resistance to leakage	Structural design and bespoke inside barrier layer combination
”Low” cost	Mono material with minimum surface and standard filling operations
Minimised complexity	Multiple formats with minor production line adaptations



© 2024 Graphic Packaging International, LLC.

Some final observations and recommendations

- Paperboard packaging offers innovative solutions that can solve complex challenges
- Well-established innovation processes may kill ideas too early and/or take too long
- Collaborate closely with your packaging partners and other organisations
- Dare to take a risk to innovate and be first-to-market



© 2024 Graphic Packaging International, LLC.

Graphic Packaging
INTERNATIONAL

Thank you



© 2024 Graphic Packaging International, LLC.