# View on fiber-based foodservice packaging

Soile Kilpi, AFRY Management Consulting

October 29th, 2026


Copyright AFRY AB | FPI Presentation

# Agenda

1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
3. Closing remarks

Copyright AFRY AB | FPI Presentation

AFRY

# AFRY is a global engineering, design, and advisory company with 18,000 experts

Net sales, USD

## 2.9 billion

2025

Countries with offices/projects

## 50/100

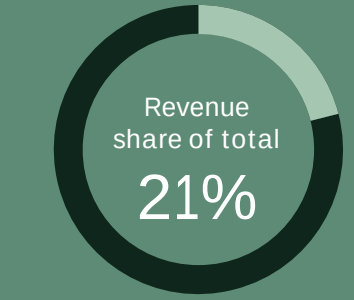
Employees globally

## 18,000

Global Division

### Energy

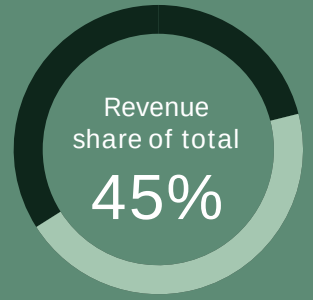
Fueling the energy transition throughout energy production, storage and distribution




Global Division

### Industry

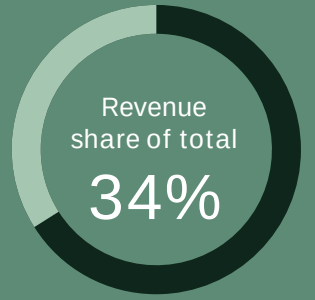
Empowering the industrial transition, securing resilient supply chains and fossil-free raw materials




Global Division

### Transportation & Places

Ensuring efficient mobility and places to last for the future



Copyright AFRY AB | FPI Presentation

# AFRY Management Consulting is the leading advisor for the transition of the bioindustry sector

We combine strategic insight, deep sector expertise, and access to AFRY's engineering capabilities to deliver forward-looking market analysis, sustainability consulting, and transformation support.

Over 700 consultants globally

Europe,
Asia,
Americas,
Middle East

## Sectors

- Power & heat
- Renewables & energy storage
- Transmission & distribution
- Hard to abate industries
- Mobility & transport
- Green fuels & chemicals
- Green gases
- Carbon management
- Forest, biomass & nature-based solutions
- Pulp & textile, wood products
- Paper, packaging, hygiene
- Waste & recycling

## AFRY Management Consulting Services

- Forward-looking market insights & analysis
- Strategic advice
- M&A and transaction services
- Sustainability consulting
- Organizational, operational, & digital transformation
- Digital products & solutions


Copyright AFRY AB | FPI Presentation

# Agenda

1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
3. Closing remarks

Copyright AFRY AB | FPI Presentation

# Fiber-based foodservice market is estimated at 3.5+ million ton/a, cartonboard is the largest segment

North American foodservice: Fiber-based packaging demand

| | FIBER-BASED FOODSERVICE | | | FUTURE TREND |
|---|---|---|---|---|
| CARTONBOARD | Plates, takeout containers | Hot cups | Cold cups | ●●○○○ |
| KRAFT PAPER | Wraps, interleaving | Carrier bags | Takeout bags | ●●●○○ |
| CONTAINERBOARD | Pizza boxes | | Other | ●○○○○ |
| MOLDED FIBER | Plates, bowls | Clamshells | Trays | ●●●●○ |

 Copyright AFRY AB | FPI Presentation 

# Lightweighting, technical barriers, and economics are major disruptors in fiber based foodservice packaging

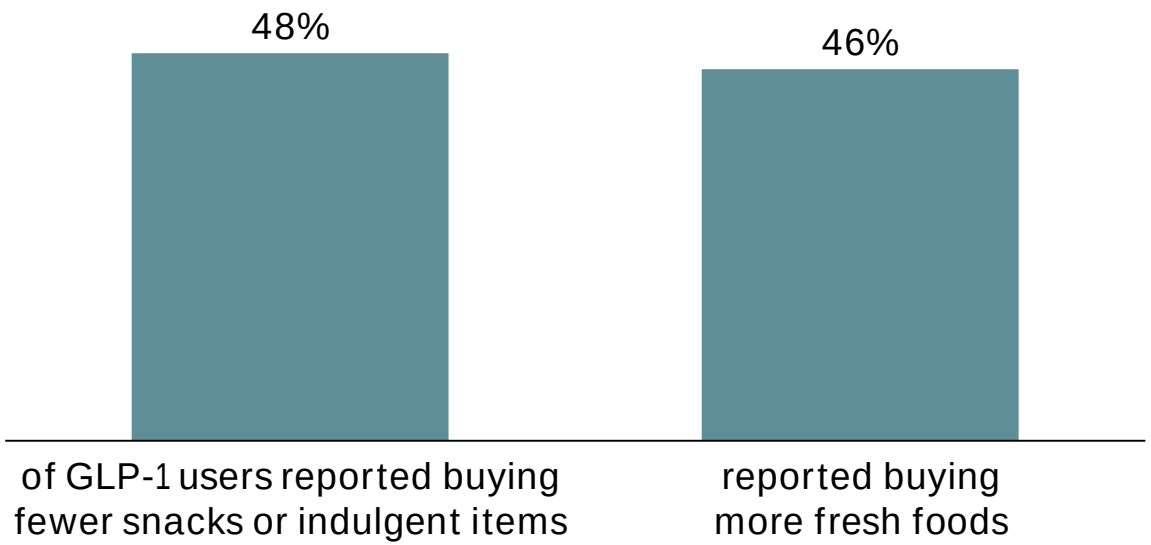
| | Sustainability | | | | Technical barriers | Economics & trade | |
|---|---|---|---|---|---|---|---|
| | Lightweighting & right-sizing | Plastic substitution | Sustainable barriers | Unbleached, RCP "appeal" | Cost & scale | Rising costs e.g. energy, freight | Imports |
| CARTONBOARD | 🔴⚫⚫ | 🟢🟢⚫ | 🔴⚫⚫ | 🟢🟢⚫ | 🔴🔴⚫ | 🔴🔴⚫ | 🔴🔴⚫ |
| KRAFT PAPER | 🟢🟢⚫ | 🟢🟢⚫ | 🔴⚫⚫ | 🟢🟢⚫ | 🔴🔴🔴 | 🔴🔴⚫ | 🔴⚫⚫ |
| CONTAINER-BOARD | 🔴⚫⚫ | ⚫⚫⚫ | ⚫⚫⚫ | ⚫⚫⚫ | ⚫⚫⚫ | 🔴🔴⚫ | 🔴🔴⚫ |
| MOLDED FIBER | ⚫⚫⚫ | 🟢🟢🟢 | 🔴⚫⚫ | 🟢⚫⚫ | 🔴🔴🔴 | 🔴🔴⚫ | 🔴🔴⚫ |

🟢🟢🟢 Positive impact on demand and adoption  🔴🔴🔴 Negative impact on demand and adoption

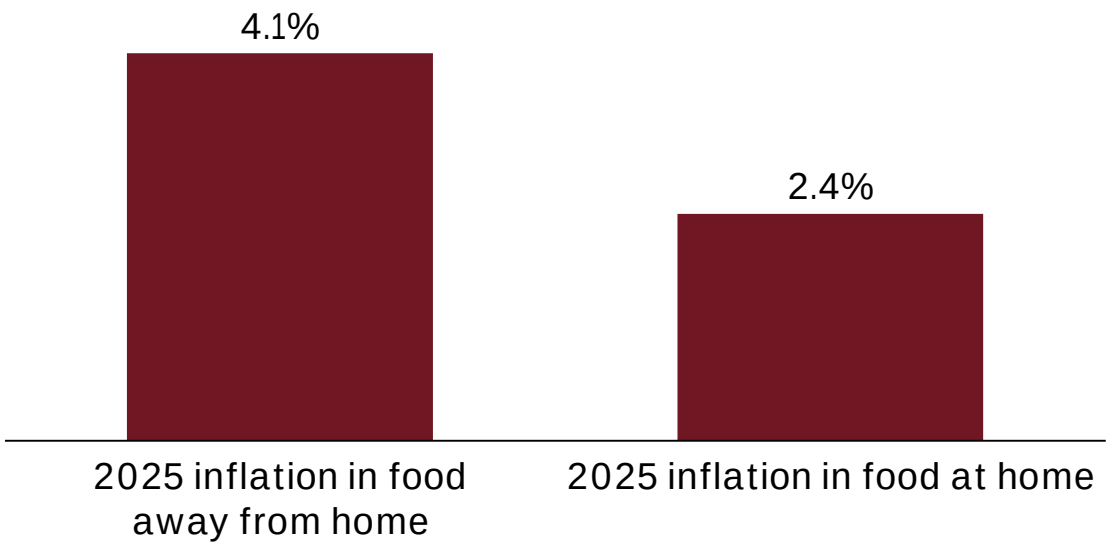
 Copyright AFRY AB | FPI Presentation 

# GLP-1 adoption is changing what consumers eat, while persistent food inflation is changing where they eat

## GLP-1 users eating less packaged, processed food




## Inflation making consumers prioritize grocery value, at-home meals, and value-led QSRs




⚠ Overall impact on fiber-based foodservice packaging: Developing & being monitored


Copyright AFRY AB | FPI Presentation

# Supply and demand fundamentals are strengthening across North American fiber-based packaging markets

## Supply and Demand outlook

- Cartonboard/bleached board oversupplied, but rationalization and demand growth are gradually restoring market balance; tariffs remain an import dam

- Kraft paper retains swing capacity, providing flexibility to accommodate demand growth

- Containerboard has returned to balance following capacity rationalization last year, with future demand growth potentially requiring investment

- Molded fiber demand growth is being met by incremental domestic capacity, and select importers replacing volumes from China

 Copyright AFRY AB | FPI Presentation 

# Agenda

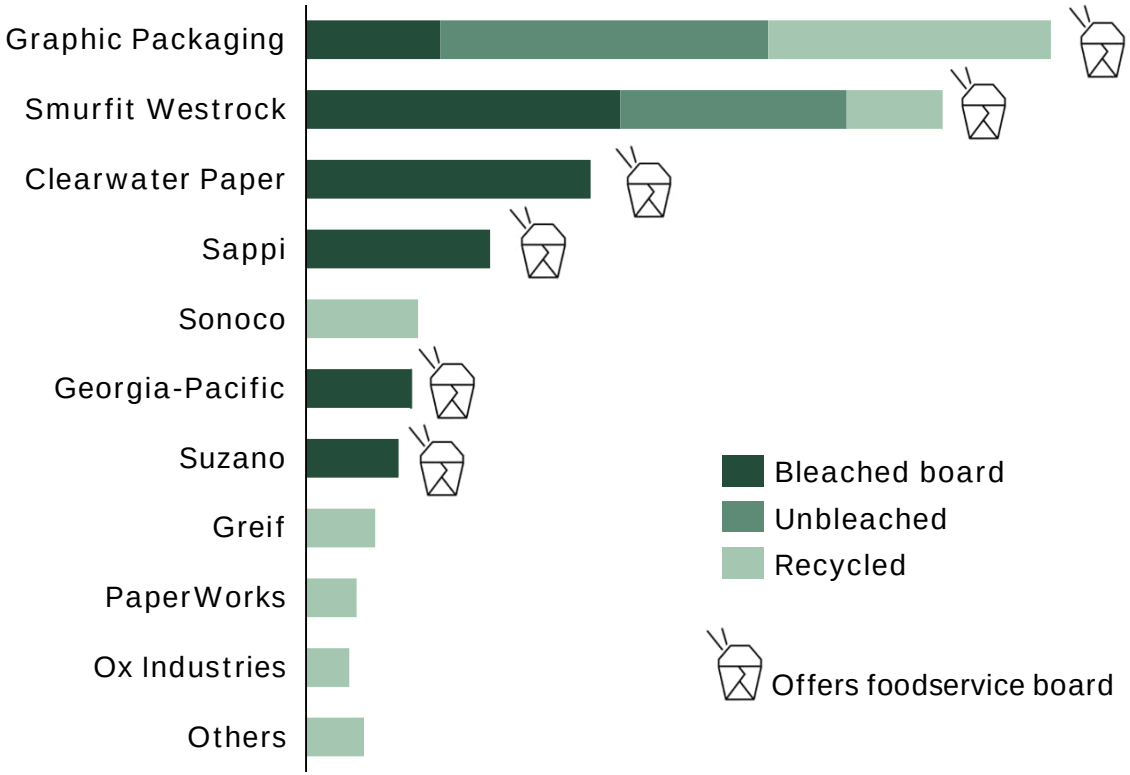
1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
   - Cartonboard
   - Kraft paper packaging
   - Containerboard
   - Molded fiber
3. Closing remarks

Copyright AFRY AB | FPI Presentation

# North American foodservice board supply is being reshaped by capacity expansions, recycled board investment, and portfolio diversification

## North American top 10 cartonboard suppliers

Capacity in tons




## Activity highlights

### Capacity changes

Smurfit Westrock, La Tuque and Clearwater, Cypress Bend: Idled SBS capacity

Graphic Packaging, Waco: Added ~500 kt/a of recycled paperboard capacity following Kalamazoo, Tama, Middletown, and East Angus closures

Sappi, Somerset: Converted PM2 to SBS, adding ~520 kt/a

Suzano: Acquired Pine Bluff and Waynesville assets, entering liquid packaging board and foodservice in North America

RYAM Témiscaming, Quebec, mill temporarily shut down

### Trade barriers reshape sourcing:

U.S. tariffs on imported cartonboard improve competitiveness of domestic production

### Multi substrate offering

Producers are expanding and differentiating portfolios


Copyright AFRY AB | FPI Presentation

# Foodservice board producers resetting portfolios as market dynamics shift and converters remain multi grade

## Product portfolio realignment

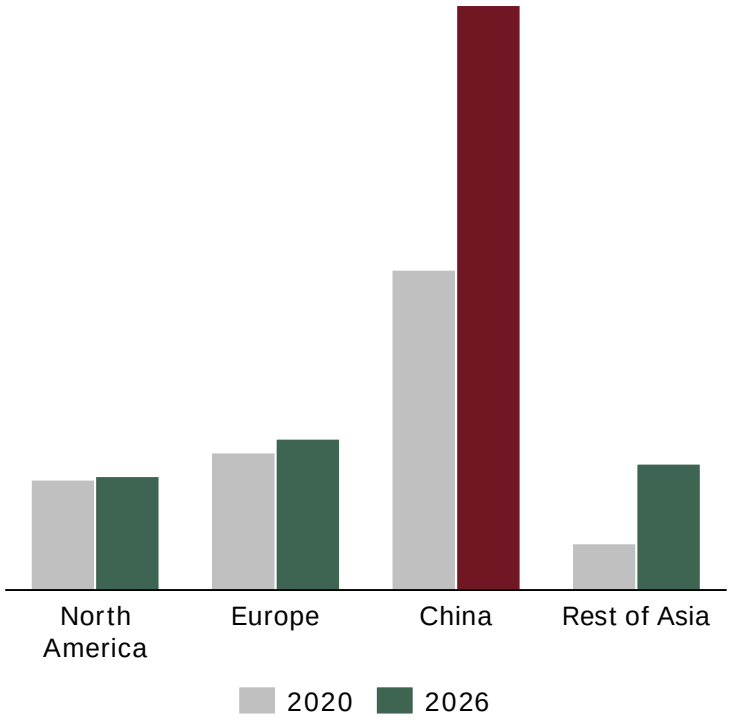
- Smurfit Westrock promoting SBS to capture share from competing paperboard types.
- Clearwater Paper partnering with Greenpaper/Mexico and offering CRB, also exploring entry into CUK.
- Graphic Packaging after exiting URB, reversing course to launch a URB grade and round out its portfolio.
- Cascades new URB offering, lithoURB, recently launched.

Copyright AFRY AB | FPI Presentation

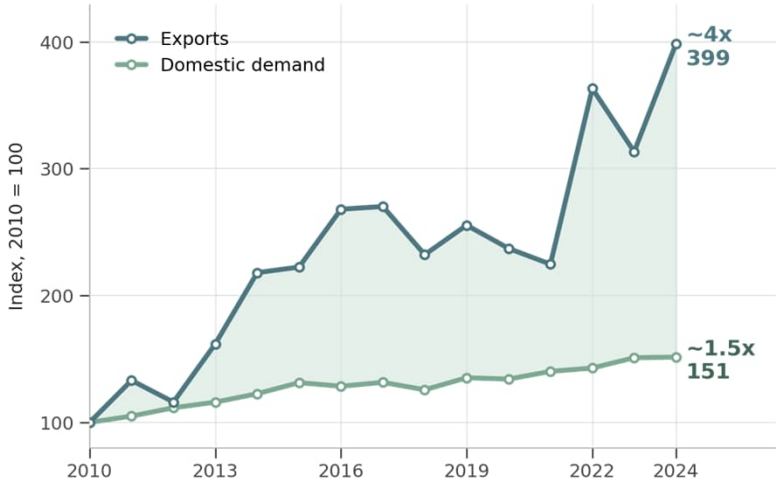
# China's excess bleached board capacity poses a growing challenge to global cartonboard markets

## Global bleached board capacity

Tons




## Chinese FBB exports and domestic demand




— Chinese FBB supply and exports have far outpaced domestic demand growth

— Exports still target Asia, Latin America, & Middle East, rather than a direct U.S. push

## Situation in 2026

BLEACHED BOARD / FBB

25%

Section 301 tariff on China

— FBB imports are subject to the additional tariff

— Meaningful landed-cost barrier, but impermanent


Copyright AFRY AB | FPI Presentation

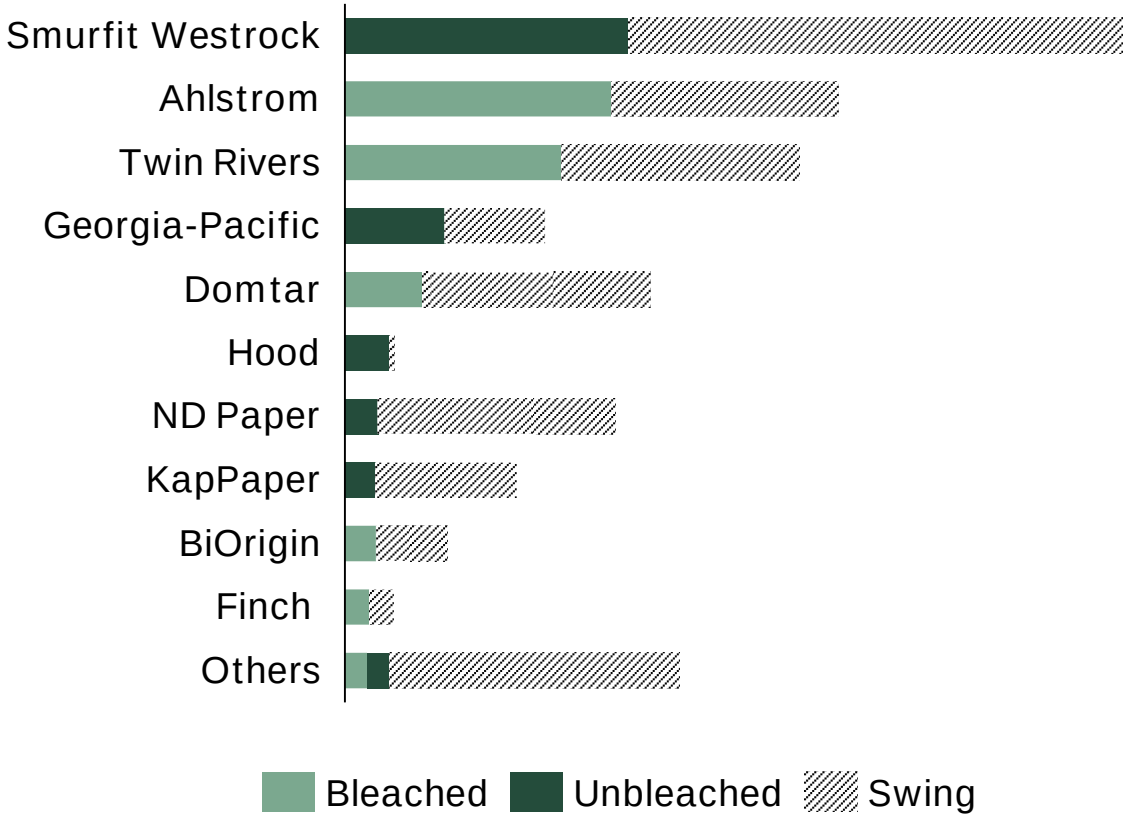
# Agenda

1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
   - Cartonboard
   - Kraft paper packaging
   - Containerboard
   - Molded fiber
3. Closing remarks

Copyright AFRY AB | FPI Presentation

# Kraft paper producer portfolios include either bleached or unbleached paper. Industry consolidation, backward integration and barrier developments taking place

## North American top 10 kraft paper packaging suppliers
Capacity in tons




## Activity highlights

Investment is shifting toward barrier performance
Ahlstrom's LamiBak Flex and Grease-Gard launches in 2025 and 2026

Backward integration of major converters
ProAmpac has built recycled kraft mill capacity through acquisitions of APC Paper (2021) and UP Paper (2024) while buying IP's kraft bag plants

PFAS-free grease resistance is a requirement
E.g. Twin Rivers' EcoBarrier, BiOrigin's BioGuard, and Ahlstrom's Grease-Gard without PFAS


Copyright AFRY AB | FPI Presentation

# Next-generation barriers are being developed

| MOVING AWAY FROM | | AIMING TOWARDS |
|---|---|---|
| **PFAS grease-proofing**<br>Fluorinated chemistry historically used for OGR | → | **PFAS-free OGR systems**<br>Water-based dispersions, mineral, and bio-based chemistries |
| **Petroleum-based paraffin wax**<br>Conventional wax can impair fiber recovery | → | **Repulpable wax replacement**<br>Bio-based or alternative coatings |
| **PE extrusion & plastic films**<br>Non-fiber layer and package complexity | → | **Thin, functional barrier coatings**<br>Dispersion, biopolymer, or mineral coatings |
| **Foil / complex laminates**<br>Difficult to separate multi material structures | → | **Fiber-dominant structures**<br>Minimum material complexity, easy separation where needed |


Copyright AFRY AB | FPI Presentation

# Agenda

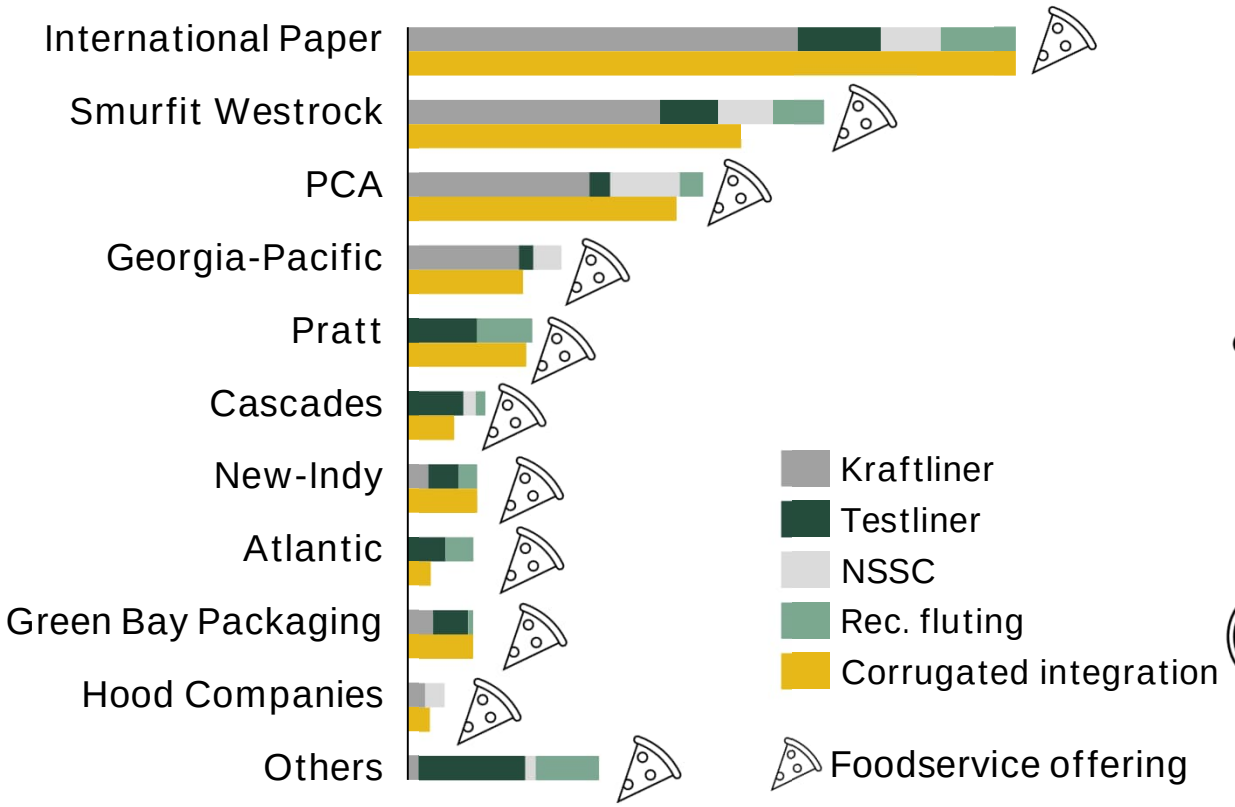
1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
   - Cartonboard
   - Kraft paper packaging
   - Containerboard
   - Molded fiber
3. Closing remarks

Copyright AFRY AB | FPI Presentation

# North American containerboard segment is highly forward integrated to box converting. Industry capacity has been rationalized

## North American top 10 containerboard & corrugated box suppliers

Capacity in tons




## Activity highlights

### Historic capacity rationalization reshapes supply

International Paper closes Campti, LA, Savannah, GA and Riceboro, GA; Smurfit Westrock closes Forney, TX

### Consolidation strengthens the largest producers

PCA acquires Greif's containerboard business; Smurfit Kappa–WestRock merger; IP's acquisition of DS Smith

### U.S. producers seek trade relief from corrugated pizza-box imports

Petitions target imports from China, Malaysia and Turkey, with potential duties supporting U.S. box producers


Copyright AFRY AB | FPI Presentation

# Pizza box developments

- Volume:
  - U.S. pizza boxes consume approximately 0.5-0.6 million tons/year of corrugated board
  - Smurfit Westrock and Pratt major domestic producers, followed by long list of regional ones
- Product:
  - Unbleached kraft, recycled and white-top
  - B-flute remains the largest format at ~50% of demand, but D-flute is increasingly relevant with 20-30% and E-flute accounts for some ~20%.
  - Optimizing toward thinner flute structures (D/E) and lower material/storage intensity
- Leading converters with dedicated pizza box lines emerging, highly automated and with better printability
- Domestic suppliers are now facing increasing imported pizza-box blanks

Copyright AFRY AB | FPI Presentation

# Agenda

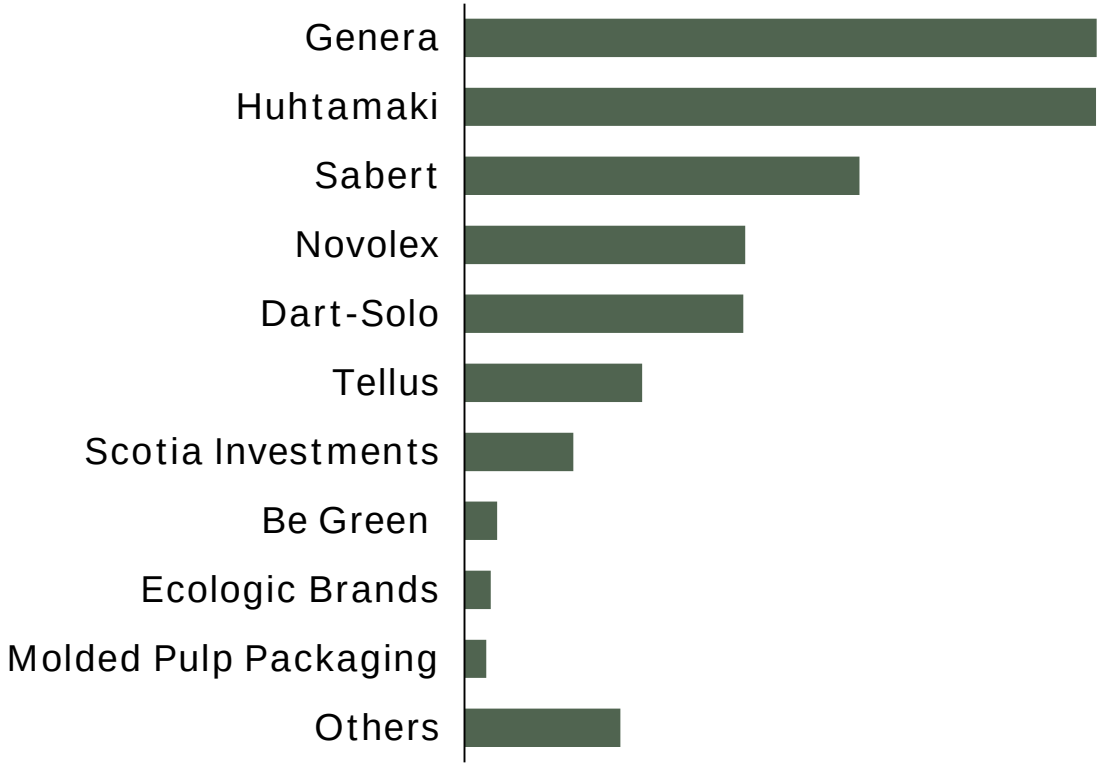
1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
   - Cartonboard
   - Kraft paper packaging
   - Containerboard
   - Molded fiber
3. Closing remarks

Copyright AFRY AB | FPI Presentation

# Leading molded fiber producers are expanding capacity as trade protection and substitution trends strengthen domestic demand

## North American top 10 Type III molded fiber packaging suppliers

Capacity in tons




## Activity highlights

### Domestic manufacturing capacity is expanding

Genera completed its $340M+ Tennessee expansion in 2025.

Dart expanded food-packaging production in Pennsylvania.

Huhtamaki reportedly expanded Waterville, Maine facility for $120M to add +500M foodservice trays by 2027.

Pulp Moulded Products invested C$3.6M in a new Ontario production line in 2026.

### Butterfly Equity to acquire Sabert

Definitive agreement announced, to be completed in 2026.

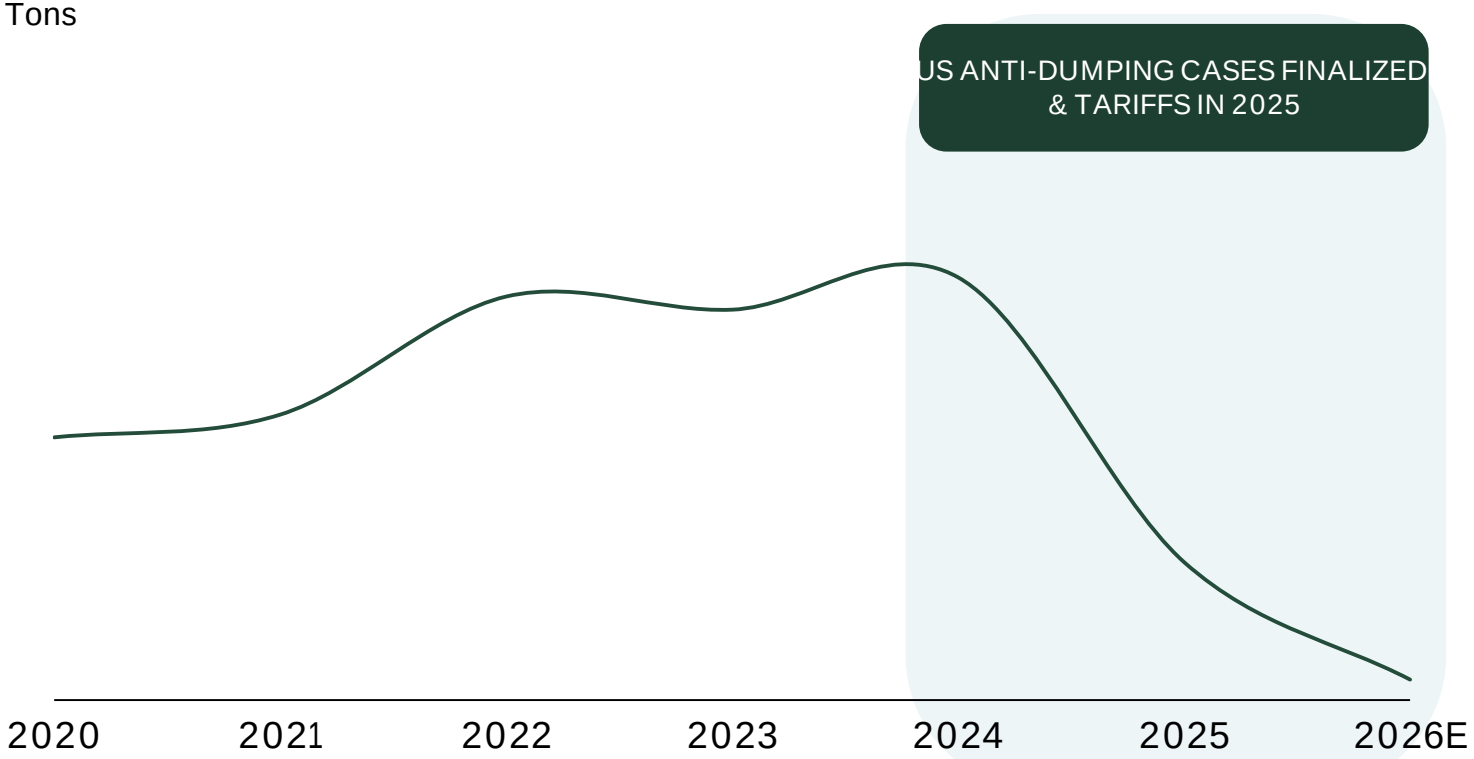
### U.S. trade remedies are strengthening domestic producers' competitive position

Antidumping and countervailing-duty orders on molded-fiber imports from China and Vietnam took effect in January 2026.


Copyright AFRY AB | FPI Presentation

# Molded fiber imports peaked in 2024 as rising trade barriers against China and Vietnam create opportunities for U.S. producers

Molded fiber imports from China: Historical development
Tons



Copyright AFRY AB | FPI Presentation

# Agenda

1. AFRY at a glance
2. Trends in foodservice fiber-based packaging
3. Closing remarks

Copyright AFRY AB | FPI Presentation

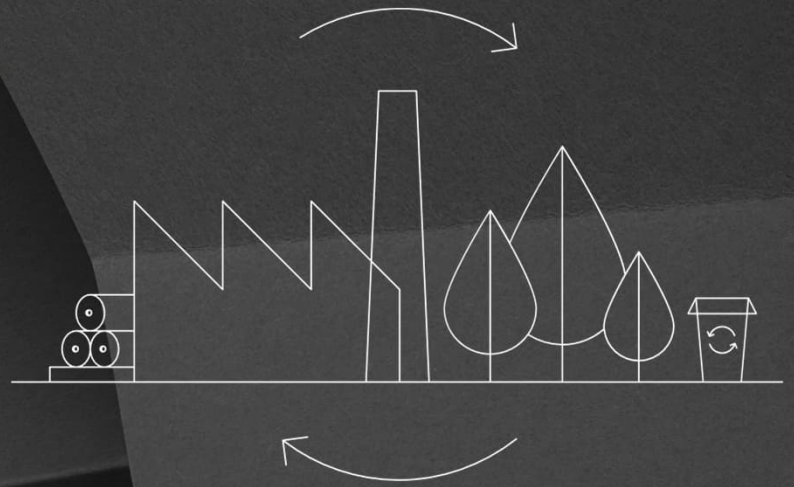
# Wrap up

- Foodservice remains a relative growth pocket within an otherwise subdued North American paper and board market, supported by takeaway, convenience and fiber-based substitution
- Lightweighting, right-sizing, and broader use of recycled and unbleached fiber are reshaping product portfolios, while suppliers expand across grades and converters remain increasingly material-agnostic
- Barrier performance is the central innovation challenge: future winners must deliver grease, moisture and heat resistance without compromising recyclability or relying on PFAS or wax
- Trade and supply dynamics are becoming more complex, as new domestic capacity, imports, tariffs, and anti-dumping actions alter the competitive position of regional producers
- Ultimately, growth will favor solutions that balance sustainability with performance, cost and commercial scale, rather than fiber substitution alone

Copyright AFRY AB | FPI Presentation

CONTACT INFORMATION

# Thank you!




SOILE KILPI
Director
AFRY MANAGEMENT CONSULTING

295 Madison Avenue, Suite 300
New York, NY 10017, United States
soile.kilpi@afry.com


 COPYRIGHT AFRY AB | FPI PRESENTATION

AFRY