

What lies ahead for Paper Packaging?

*Opportunities
for
market growth
through
Plastic Replacement*

Nov 2024

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Neil Osment – NOA

Some background to NOA...

- ▶ Focussed on researching European and Global paper packaging trends
- ▶ Commissioned by several European and Global associations (including FEFCO, ECMA, ICCA and EMPHA) as well as private, global packaging client companies
- ▶ Committed to analysing and identifying important trends within the European paper packaging markets and supporting the strategic planning process for paper packaging companies

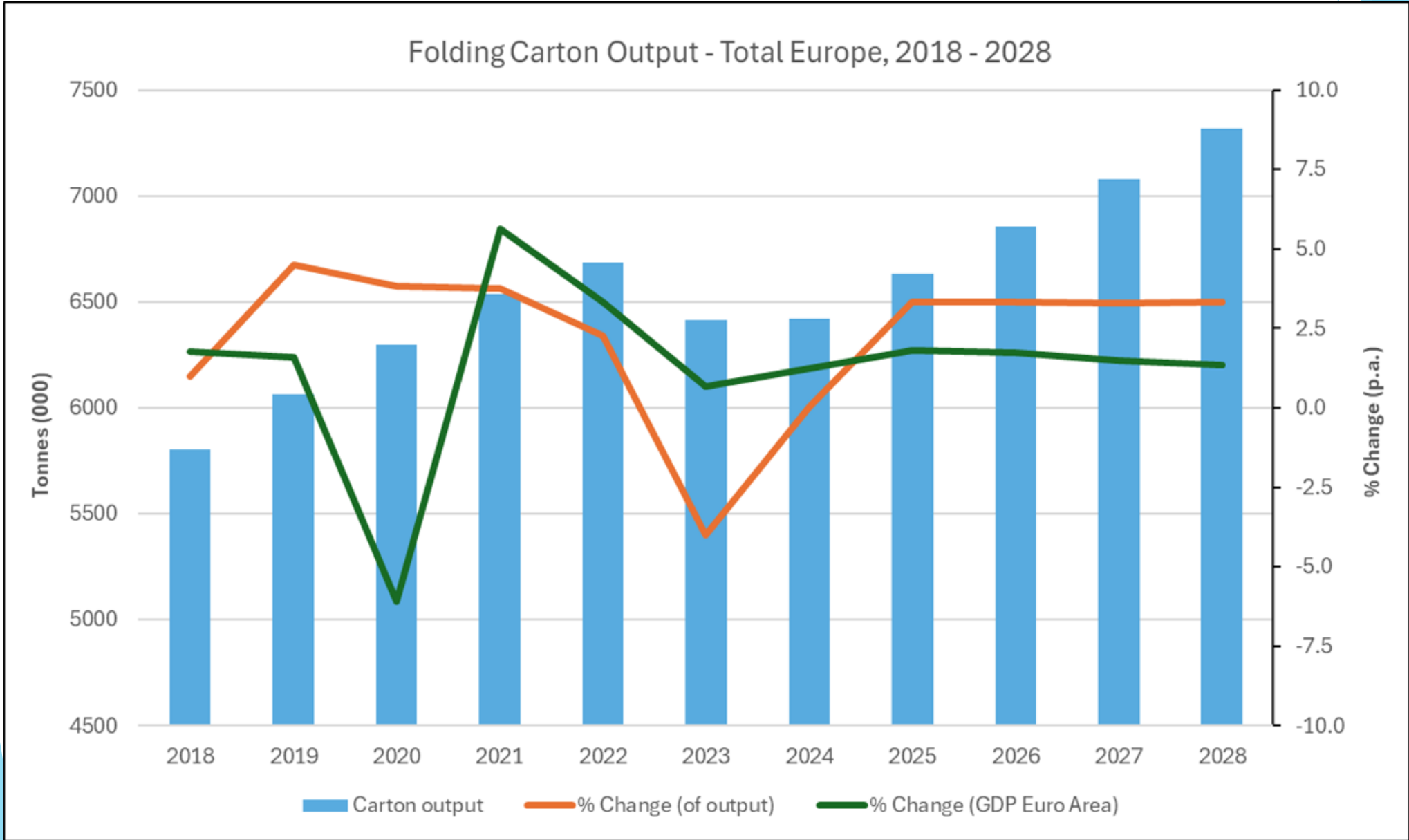


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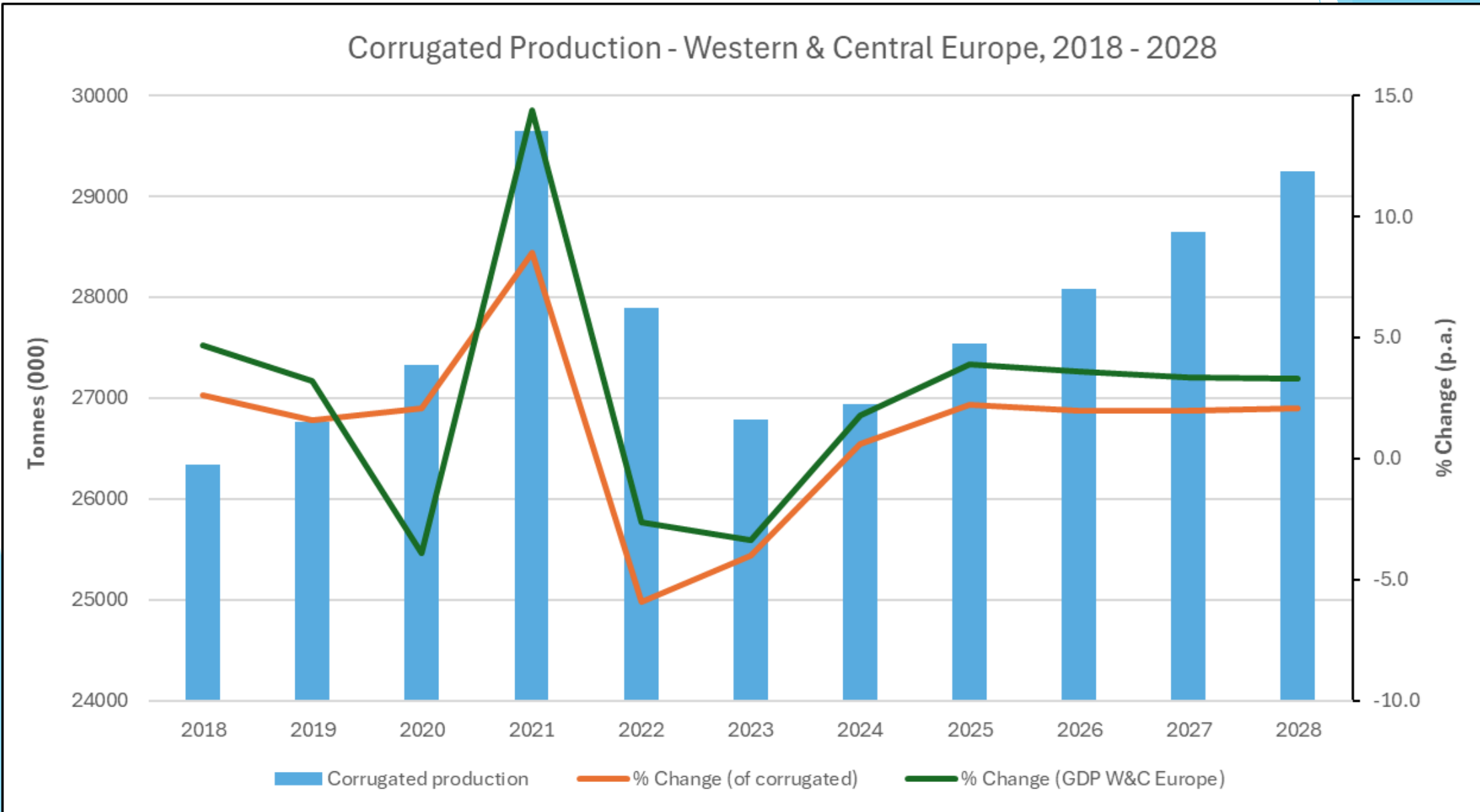
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 - Opportunities for PR
 - Technical
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 - Innovation
- ▶ Summary & Conclusions

Folding Carton Prospects (2023) - Europe



Corrugated Prospects (2023) – Europe



Folding Carton Prospects - Europe

Estimates & Forecasts of Cartonboard Purchases, Folding Carton Output & Sales Turnover - Total Europe – 2018 to 2028 - 000 Tonnes & € Million										
	Cartonboard Purchases			Carton Output			GDP Index	Carton Sales		
Year	000 Tonnes	% p.a.	Index 18=100	000 Tonnes	% p.a.	Index 18=100	Index 18=100	€M	% p.a.	Index 18=100
2018	6362	1.6	100.0	5804	1.0	100.0	100.0	11283	0.4	100.0
2019	6645	4.5	104.5	6065	4.5	104.5	101.6	11786	4.5	104.5
2020	6873	3.4	107.9	6298	3.8	108.3	95.5	12012	1.9	106.4
2021	7034	2.3	110.2	6535	3.8	112.1	101.1	12887	7.3	113.7
2022	7674	9.1	119.3	6685	2.3	114.4	104.5	14775	14.6	128.3
2023	6902	-10.1	109.3	6416	-4.0	110.4	105.1	14447	-2.2	126.1
2024	6955	0.8	110.0	6420	0.0	110.4	106.4	13810	-4.4	121.7
2025	7819	12.4	122.4	6634	3.3	113.8	108.2	13515	-2.1	119.5
2026	8081	3.4	125.8	6854	3.3	117.1	109.9	13925	3.0	122.6
2027	8350	3.3	129.1	7079	3.3	120.4	111.4	14324	2.9	125.4
2028	8632	3.4	132.5	7316	3.3	123.7	112.7	14726	2.8	128.2
Average % p.a. 18 to 23	1.6			2.0			1.0	5.1		
Average % p.a. 23 to 28	4.6			2.7			1.4	0.4		

- ▶ In 2022, Q4 and orders fall away
- ▶ 2023 - Volume drops away by -4%
- ▶ 2023 - Sales hold up (relatively) at -2.2%, holding on to margins

Folding Carton Prospects - Stocks

- ▶ October 2022 and Mill orders dry up
- ▶ 2023 = year of using up stocks:
 - ▶ Packer/Filler & Brand Owners (much in 2022)
 - ▶ Folding Carton converter (start of 2023)
 - ▶ Mills (end of 2023)
- ▶ 2024 = year of recovery
- ▶ 2025 = will this be the year of “bounce back”?
- ▶ After 3 strange, unpredictable years, will 2025 settle down into a more normal pattern?

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Folding Carton Prospects – by Country

Estimates & Forecasts of Carton Output – Total Europe Analysed by Country – 2018, 2023 & 2028 – 000 Tonnes								
	2018		2023		2028		% p.a.	% p.a.
SECTOR	000 Tonnes	%	000 Tonnes	%	000 Tonnes	%	18 to 23	23 to 28
Austria	136	2.3	162	2.5	175	2.4	3.6	1.6
Belgium	119	2.1	129	2.0	140	1.9	1.6	1.7
France	581	10.0	578	9.0	663	9.1	-0.1	2.8
Germany	1061	18.3	1064	16.6	1048	14.3	0.0	-0.3
Italy	668	11.5	694	10.8	773	10.6	0.8	2.2
Netherlands	307	5.3	340	5.3	378	5.2	2.1	2.1
Spain	414	7.1	510	8.0	615	8.4	4.3	3.8
Switzerland	87	1.5	86	1.3	97	1.3	-0.3	2.5
Turkey	525	9.0	585	9.1	673	9.2	2.2	2.8
U.K.	621	10.7	639	10.0	720	9.8	0.6	2.4
Other Western Europe	204	3.5	227	3.5	250	3.4	2.2	1.9
Sub total West Europe	4723	81.4	5015	78.2	5533	75.6	1.2	2.0
Nordic	165	2.8	169	2.6	188	2.6	0.4	2.2
Poland	549	9.5	763	11.9	991	13.5	6.8	5.4
Other Central Europe	366	6.3	470	7.3	604	8.2	5.1	5.1
Sub total Central Europe	1080	18.6	1401	21.8	1783	24.4	5.3	4.9
Total Europe	5804	100.0	6416	100.0	7316	100.0	2.0	2.7

Folding Carton Prospects – by End Use Market

Estimates of Carton Sales Analysed by Market – Total Europe – 2023 – 000 Tonnes, € Million, € per Tonne					
SECTOR	Carton Output - 000 Tonnes	%	€ M	%	€ per Tonne
Food					
Breakfast cereal products	288	4.5	560	3.9	1947
Cakes, biscuits, baked products	387	6.0	675	4.7	1745
Chocolate & sugar confectionery	501	7.8	1121	7.8	2236
Chilled foods	288	4.5	529	3.7	1837
Dairy	5	0.1	9	0.1	1837
Dry beverages	161	2.5	299	2.1	1851
Food to go	222	3.5	429	3.0	1936
Frozen food	802	12.5	1452	10.1	1811
Soft drinks & beer	427	6.7	946	6.5	2213
Wines & spirits	204	3.2	460	3.2	2258
Other foods	622	9.7	1204	8.3	1936
Sub total Food	3907	60.9	7685	53.2	1949
Non-Food					
Cigarettes, tobacco, accessories	370	5.8	842	5.8	2275
Cleaning & laundry products	270	4.2	467	3.2	1730
Cosmetics & beauty	232	3.6	817	5.7	3523
Misc household products	230	3.6	489	3.4	2129
Paper, stationery & related goods	118	1.8	276	1.9	2343
Personal care	201	3.1	518	3.6	2570
Pharmaceuticals & medical prods.	614	9.6	2102	14.6	3422
Other non foods	474	7.4	1250	8.7	2635
Sub total Non-food	2510	39.1	6762	46.8	2690
TOTAL	6416	100.0	14447	100.0	2239

Folding Carton Prospects – by End Use Market

Estimates & Forecasts of Carton Output Analysed by Market – Total Europe – 2018, 2023 & 2028 – 000 Tonnes								
SECTOR	2018		2023		2028		Growth p.a. (%)	
	000 Tonnes	%	000 Tonnes	%	000 Tonnes	%	18 to 23	23 to 28
Food								
Breakfast cereal products	289	5.0	288	4.5	282	3.9	-0.1	-0.4
Cakes, biscuits, baked products	355	6.1	387	6.0	466	6.4	1.7	3.8
Chocolate & sugar confectionery	469	8.1	501	7.8	561	7.7	1.4	2.3
Chilled foods	244	4.2	288	4.5	337	4.6	3.4	3.2
Dairy	1	0.0	5	0.1	50	0.7	38.0	58.5
Dry beverages	144	2.5	161	2.5	198	2.7	2.3	4.2
Food to go	195	3.4	222	3.5	273	3.7	2.6	4.3
Frozen food	679	11.7	802	12.5	972	13.3	3.4	3.9
Soft drinks & beer	326	5.6	427	6.7	475	6.5	5.6	2.1
Wines & spirits	182	3.1	204	3.2	225	3.1	2.3	2.1
Other foods	538	9.3	622	9.7	731	10.0	3.0	3.3
Sub total Food	3421	58.9	3907	60.9	4570	62.5	2.7	3.2
Non-Food								
Cigarettes, tobacco, accessories	380	6.5	370	5.8	341	4.7	-0.5	-1.6
Cleaning & laundry products	242	4.2	270	4.2	316	4.3	2.2	3.2
Cosmetics & beauty	211	3.6	232	3.6	260	3.6	1.9	2.3
Misc household products	226	3.9	230	3.6	256	3.5	0.4	2.2
Paper, stationery & related goods	119	2.1	118	1.8	126	1.7	-0.2	1.4
Personal care	180	3.1	201	3.1	227	3.1	2.3	2.4
Pharmaceuticals & medical prods.	551	9.5	614	9.6	670	9.2	2.2	1.7
Other non foods	476	8.2	474	7.4	550	7.5	-0.1	3.0
Sub total Non-food	2384	41.1	2510	39.1	2746	37.5	1.0	1.8
TOTAL	5804	100.0	6416	100.0	7316	100.0	2.0	2.7

Folding Carton Prospects – by End Use Market

- ▶ Cakes, Biscuits & Baked Products
- ▶ Chocolate & Sugar confectionery
- ▶ Chilled (esp Produce & Protein)
- ▶ Dairy
- ▶ Dry Beverages
- ▶ Food-to-Go
- ▶ Frozen
- ▶ Other Foods Cleaning & Laundry
- ▶ Other non-Foods (esp Petfoods)

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TOTAL	5804	100.0	6416	100.0	7316	100.0	2.0	2.7



Forecasting the **Plastic Replacement** opportunity

(esp. in primary packaging)

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Key drivers & “drag anchors” for Plastic Replacement (PR)

Consumers

- ▶ Consumer pressure:
 - Especially from “Papertarians” who are influenced by ecological issues.
 - Already having a significant influence on Brand Owner and Retailer strategies.
 - Their opinion is of great importance, significance and cannot be ignored
- ▶ Retailers want to encourage consumers
- ▶ Consumers show their dissatisfaction over “progress with removing plastics” by returning plastic packaging to retailer outlets
- ▶ Retailers cannot (and must not) ignore this feedback
- ▶ Retailers are having to act.....

Retailers

- ▶ Are listening to consumer opinion
- ▶ By winning (back) consumers, retailers win market share
- ▶ LLDs currently taking market share, so traditional retailers
 - Need to differentiate themselves
 - Are focused on sustainability and care for the environment as a USP
 - See the opportunity and have adopted PR as a strategic goal
- ▶ Most of the current pack change types are “hybrid” options (e.g. 4-corner glued fibre tray + a PE laminate + lidding material).



Brand Owners

▶ Brand Owners Focus

- Product Related - #1
- Reducing Food Waste - #2
- Packaging (SUP and cost) - #3

▶ Brand Owner pressures

- Consumer opinion, ratings and appeal
- Retailer relationship

▶ Brand Owner's actions

▶ Case Studies

- Unilever
- P&G
- PepsiCo



Legislation

▶ PPWR

- Green Deal
- Legislation to date
- Where next?

▶ EPS legislation and ban on EPS

▶ Plastic Tax

▶ EPR across Europe

▶ EUDR (Deforestation Regulations) and the GREEN DEAL

▶ PPWR process may take another 2 to 3 years of political discussions before finalising of directives, which means that the impact on plastic substitution could take longer

▶ The “in-fighting” within some parts of the European paper packaging industry over recycling guidelines and management of mixed waste may slow down the speed of change with plastic substitution as well



Plastics industry

- ▶ Plastics companies will continue to defend their volumes
- ▶ Greenwashing, Greenhushing and Green Bleaching is increasing
 - Compostability
 - Nano-plastics
 - Bio-degradability
 - Two Sides
- ▶ Pack re-design - trend for using mono-materials
- ▶ Micro-particulates
- ▶ Plastic industry fighting back?
 - Non-plastic polymers
 - The Tetra story





Opportunity for PR

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Plastics & the macro substitution opportunity

- ▶ Total size of the European Plastics supply market = 49m tonnes (Source : Plastics Europe)
- ▶ Plastic Packaging represents **approx. 22.3m tonnes**. (corrugated, cartons & other fibre = **c.40m tonnes**)
- ▶ The Plastics supply market breaks down into
 - Flexibles formats
 - Thermo-formed containers
 - Blow moulded (for Milk, Juices, etc.)
 - Injection moulded specifications
- ▶ Some flexibles formats offer good “substitution” opportunities for paper fibre; however, many flexible formats are very cost-effective and offer great value to brand owners
- ▶ Injection, moulded and thermo-formed formats require complex technical solutions or high investment costs (or both!) to convert into a board-based format



Plastics & the macro substitution opportunity

- ▶ Our estimate 12 months ago was between 1.5% and 3.5% of plastic packaging could convert to fibre over the next 5 years (this range due to the identified Key Issues & Drivers)
- ▶ This could equate to between **0.3m to 0.8m tonnes** of plastics, with a potential conversion of **1.5m+ tonnes of fibre**
 - A tonnage volume equivalent to c.**24%** of the annual volume of the **European FC market** if all converted to FCs!
 -or a tonnage equivalent to **c.50%** of the **French corrugated market** if all converted into corrugated!
- ▶ Credible estimates need to be made (i.e. EUM by EUM) based on what the most susceptible formats for plastics substitution are; hence a granular, bottom-up approach has been taken by NOA with our latest multi-client research.....
- ▶our 2024 bottom-up estimates for the next 5-year period indicate a potential of 0.7m tonnes for PS using barrier boards alone



Early Leaders – the “Low Hanging Fruit”

- ▶ Identified by NOA’s study in Q4, 2023
- ▶ Opportunities coming mainly from carton board solutions in the following End Use Markets (EUMs)
 - Bakery
 - continuing to grow as part of a European “food-to-go” culture
 - Beer & Soft Drinks
 - grew hugely during covid and continues to replace plastics at a sustained rate
 - Detergents
 - success with pod packs now migrating into other packaging pack formats
 - Produce
 - see on-going increase in packaging within this end use market (both for Chilled and Ambient product)
 - EPS replacement in non-food
 - steady growth, although EU “Ban” on EPS has not been policed and notable volumes still being used in this market
- ▶ Volume identified and moving due to Plastic Substitution (PS) equates to 0.44m tonnes of incremental growth for board by 2028.

N.B. this volume estimate is from NOA’s 2023 study and is most likely to be larger in the light of recent Brand Owner and Retailer activities

Beer & Soft Drinks

Shelf space has gone
from this in 2015.....



....to this in 2024

Cleaning & Laundry



Shelf space gone from
this in 2015.....

....to this in 2024



Cleaning & Laundry



Confectionery



Dry Foods – déjà vu!



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Ambient Produce - Mushrooms



Drinks – before and after



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The new Opportunity



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The Next Stage - Barrier Board Solutions

The European Market for Plastic Packaging Analysed by Polymer Type & Application - 2023 - Tonnes (m)							
Polymer Type	Bottles	Pots, Tubs & Trays	Caps & Closures	Boxes & Crates	Flexible Films	Others	Total
LDPE & LLDPE	0.30	0.00	0.00	0.00	3.50	0.20	4.00
HDPE	2.49	0.52	0.38	0.66	1.90	0.00	5.95
PP	0.14	1.65	0.32	0.27	2.20	0.00	4.58
PET & CPET	3.60	0.90	0.00	0.00	1.00	0.00	5.50
Others	0.20	0.30	0.00	0.40	0.87	0.50	2.30
Total	6.73	3.37	0.70	1.33	9.47	0.70	22.30

NB1. Other polymers include PS, PVC, EPS, EVOH, PA

NB2. Pots and trays includes pails

NB3. Other applications include blister packs, collapsable tubes, fitments

- Main PS opportunity for barrier boards = Rigid Pots, Tubs and Trays sector of the plastic packaging market
- Flexible Films volume is huge (over 40% of the total); however....
- Potential opportunity for plastic substitution needs to overcome the cost benefit of plastic films:
 - Currently a major barrier to making inroads here in the short term
 - Some trials to replace shrink-wrap are happening though

Summary of European Plastic Films Market analysed by Film Types - 2023 - Tonnes (m)		
	%	Tonnes (m)
Refuse sacks	7	0.660
Carrier bags	6	0.550
Sacks and bags	7	0.660
Heavy duty bags	8	0.770
Sub- total	28	2.640
Film on the reel	10	0.990
Shrink film	15	1.440
Stretch film	20	1.870
Sub total	45	4.300
Flexible packaging	27	2.530
Total	100	9.470

The Key Targets for Barrier Board Solutions

The 4 End Use Markets

The European Rigid Plastic Pots, Tubs & Trays Market analysed by the 4 Target Sub-Markets - 2023 - Tonnes (m)

End-use markets	Tonnes (m)
Chilled Foods	1.274
Frozen Foods	0.320
Dairy Products	0.462
Ambient F&V	0.017
Sub-total by Target Markets	2.073
P, T & Ts by other markets	1.128
Sub-total before waste	3.202
Waste @ 5%	0.169
Total for P, T & Ts	3.370

The European Flexible Plastic Market analysed by the 4 Target Sub-markets - 2023 - Tonnes (m)

4 Target End Use Markets	Tonnes (m)
Chilled Foods	0.094
Frozen Foods	0.239
Dairy Products	0.030
Ambient F&V	0.012
Sub-total by target markets	0.375
Other Flexible plastics markets and materials	2.155
Total	2.530

NB1. Other non-target markets includes confectionery, crisps & biscuit sub-markets.

NB2. Overall total of 9.5m tonnes includes other film applications outside of direct food contact (e.g. carrier bags, waste bags, etc.).

NB3. Other flexibles includes foil and other complex laminates.

How the opportunity breaks down (by Units & Tonnage)

The European Target Markets for Plastic Substitution analysed by Pack Type - 2023; by Units (m), Tonnes & % Market Share

Packaging Types	Chilled Foods			Frozen Foods			Dairy Products			Ambient Fruit & Vegetables			Total	
	Units (m)	Tonnes	Market Share (%)	Units (m)	Tonnes	Market Share (%)	Units (m)	Tonnes	Market Share (%)	Units (m)	Tonnes	Market Share (%)	Units (m)	Tonnes
Rigid Plastics	49,074	1,273,798	62.5	8,092	320,454	13	31,160	461,732	63	1,096	17,254	16	89,422	2,073,238
Flexible Plastics	11,778	94,223	15	29,879	239,033	48	9,892	29,676	20	3,903	11,708	57	55,452	374,640
Cartonboard (inc. MF)	11,385	286,054	14.5	20,542	796,000	33	989	4,946	2	959	19,172	14	33,875	1,106,172
Others	6,282	282,668	8	3,735	56,023	6	7,419	77,900	15	890	4,451	13	18,326	421,041
Total	78,519	1,936,742	100	62,248	1,411,511	100	49,460	574,253	100	6,847	52,585	100	197,074	3,975,091

PS potential - Units

Target Markets for Plastic Substitution analysed by Pack Type - 2023 & 2028 - Units (m)										
Packaging Types	2023		2023-2028						2028	
	Units (m)	Market Share (%)	Organic Growth		PS Growth/Decline		Incremental Growth/Decline		Units (m)	Market Share (%)
			Units (m)	YOY Growth (%)	Units (m)	YOY Growth (%)	Units (m)	YOY Growth (%)		
Rigid Plastics	89,422	45.4	11,493	2.45	-19,028	-4.09	-7,534	-1.64	81,888	36.7
Flexibles Plastics	55,452	28.1	7,299	2.50	-	-	7,299	2.50	62,751	28.2
Cartonboard (inc.MF)	33,875	17.2	4,769	2.67	19,028	8.34	23,797	11.01	57,672	25.9
Others	18,326	9.3	2,232	2.32	-	-	2,232	2.32	20,557	9.2
Total	197,074	100	25,794	2.49	-	-	25,794	2.49	222,868	100

Packaging Type	Units (Ms)	Tonnage
Rigid Plastics	89,422	2,073,238
Flexible Plastics	55,452	374,640
Cartonboard (inc. MF)	33,875	1,106,172
Others	18,326	421,041
Total	197,074	3,975,091

The opportunity, noted in millions of Units

PS potential - Tonnage

Target Markets for Plastic Substitution analysed by Pack Type - 2023 & 2028 – Tonnes										
Packaging Types	2023		2023-2028						2028	
	Tonnes	Market Share (%)	Organic Growth		PS Growth/Decline		Incremental Growth/Decline		Growth & PS Forecast	
			Tonnes	YOY Growth (%)	Tonnes	YOY Growth (%)	Tonnes	YOY Growth (%)	Tonnes	Market Share (%)
Rigid Plastics	2,073,238	52.2	283,916	2.60	-465,713	-4.31	-181,797	-1.71	1,891,441	39.8
Flexibles Plastics	374,640	9.4	50,909	2.58	-	-	50,909	2.58	425,550	8.9
Cartonboard (inc.MF)	1,106,172	27.8	154,142	2.64	698,569	9.22	852,712	11.86	1,958,883	41.2
Others	421,041	10.6	59,239	2.67	-	-	59,239	2.67	480,281	10.1
Total	3,975,091	100	548,207	2.62	232,856	1.01	781,063	3.63	4,756,155	100

Packaging Type	Units (Ms)	Tonnage
Rigid Plastics	89,422	2,073,238
Flexible Plastics	55,452	374,640
Cartonboard (inc. MF)	33,875	1,106,172
Others	18,326	421,041
Total	197,074	3,975,091

The opportunity, noted in Tonnes



Technical

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Barrier board & coating solutions

► Barrier solutions

- Coating
- Film lamination
- Extrusion

► Where is the largest change happening?

- Produce
- Ready Meals
- Protein

► Who is pioneering change the fastest?

- **Folding Cartons** (the “go to” product for Brand Owners and Retailers due to a proven track record and commitment to invest)
- **Corrugated** (offers a great opportunity for Brand Owners and Packer/Fillers due to relative speed of response – lead times measured in days vs “many weeks” for FCs. Brand Owners are realising these advantages PLUS the effectiveness of Microflute with barrier solutions can be a credible alternative to FC solutions)
- Moulded Pulp
- Flexible bags
- Plastics too!

► Innovation and invention “hubs”



Carton solutions and options

► Barrier solutions

- Various plastic films, mainly polyethylene liners
- Non-plastic coatings (e.g. Xampla, Kelpi, NotPla, etc.) but are mainly in the “scale-up” stage currently and may take 2 or 3 years to become “mainstream”

► Innovation and invention

- FC system #1 (underside, outside seal). Suffers from inconsistent gluing of tray to top seal
- FC system #2 (topside seal + bonding to lower, inner PE liner). Early issues with sealing and gluing too, however that seems to have been overcome and most specifications on the market are to this format
- FC system #3 & “sister” Corrugated system (topside seal with spot gluing on inner kraft liner). Becoming popular as Brand Owners & Retailers strive to find plastic substitution solutions to satisfy the speed and pace desired by consumers



Carton solutions and options

- ▶ Produce (Chilled & Ambient)
 - ▶ Fruit
 - ▶ Vegetables
 - ▶ Salads



Carton solutions and options

► Protein (Chilled)

► Poultry

► Meat

► Fish



Carton solutions and options

► Frozen Foods

- Ice Cream
- Ice Lollies
- Frozen Vegetables
- Desserts



Carton solutions and options

- ▶ Dairy

- ▶ Yogurts
- ▶ Desserts
- ▶ Cheese



Chilled Foods – Example (Protein)



Chilled Foods – Example (Protein)



Where are the best BBS opportunities?

Significant potential is offered by replacing tray, pot, tub and punnet packs like these.....

.... by adoption of pack types like these



...top-down estimates in 2023 suggested that another 1.1m tonnes were available; of those estimates, we forecast that the barrier board opportunity is worth **0.7m tonnes of fibre alone**.

NOA's Barrier Carton Project

Estimates by 4 Target Markets –2023 & 2028

Barrier Carton Construction forecast growth due to Plastic Substitution across the 4 Target Markets - estimated to be by 2028 - Units (m)						
	Packaging Types					
	Corner Glued Trays	Formed Trays	Built Up Containers	Microflute	Other carton formats	Total
Chilled Foods						
Frozen Foods						
Dairy Foods						
Ambient Fruit & Veg						
Total Units						

These details are available to subscribers of NOA's m/c report (MCR24)

See contact details at the end if you wish to become a subscriber



A joined-up Supply Chain

Commentary on the constraints for PR



A Circular Economy?

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Time to talk Rubbish!

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We are inviting consumers into our world...



**.....and forcing them to make decisions
about Litter/Garbage/Refuse/Rubbish**

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**Some
companies
are helping
consumers
find easier
ways...**



**.....to
dispose of
their
Packaging
Waste**

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Some people are helping consumers...



....by forcing Brand Owners to think about their Garbage

Recycling

The most favoured pack types will be those where the packaging is the easiest to recycle.

Our industry needs a critical mass of suitable European recycling facilities....

.....PLUS we need a unified agreement on levels of mixed waste if we want to influence the progress of plastic substitution over the next 5 to 7 years



Who might be Winners or Losers?

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Winners in the PR race!

- ▶ **Folding Cartons** (*well established position with Retailers; a proven record for packs combining with PE laminates*)
- ▶ **Corrugated** (*especially availability of Microflute vs Cartonboard – Mill capacity*)
....and these product packs have a role to play too
- ▶ **Moulded Fibre**
- ▶ **Paper Bags**
- ▶ **Honeycomb**
- ▶ **Liquid cartons**
- ▶ **A few other niche fibre packs** (e.g. glassine, etc.)

.....the most favoured will be those where the packaging is the easiest to recycle.

4-corner glued trays using PE barrier liners, a tried & tested solution, are likely to be the winners over the next few years.

Design & Innovation



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Design & Innovation



FlatSkin®

With a cardboard plate and thin polymeric film, FlatSkin® can reduce plastic use by up to 75%. Easy to open, appealing to customers, and perfect for most kinds of fresh food. And great for the planet.



FlatMap®

Less plastic, more communication and optimal shelf-life. An innovative packaging solution that puts sliced meat, dairy and seafood products in the spotlights. FlatMap® creates a fresh, new look at retail, but also convinces with a resource-saving use of materials.



Trays

Replace plastic with a sustainable alternative – perfect for non-food or food. Choose solid board or corrugated board with or without top seal or barrier features. Adaptable to any packaging climate, available in a variety of shapes and with high-quality printing and finishing effects.



Cambotainer®

A stylish alternative to conventional rigid tubes, using 95% less plastic. Delivered flat and filled and assembled at your production line, cambotainers massively reduce supply chain inefficiencies. Who wants to waste money delivering air?



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Design & Innovation



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Summary & Conclusions

Plastics opportunity - Summary

- ▶ Low hanging fruit = No barrier packaging:
 - ▶ Between 0.45m to 0.55m tonnes of extra volume/annum
 - ▶ Steadily growing year on year
- ▶ Next opportunity = Barrier board packaging
 - ▶ Estimated to be 0.7m+ tonnes of fibre packaging
 - ▶ Likely to take some years to come on stream
 - ▶ Factors include technical, legislative and fibre industry's determination to change
- ▶ When?
 - ▶ In less than 5 years or (if delayed) more than 8 years.
 - ▶ Several factors could scupper the pace and volume of the opportunity
 - ▶ “Early adopters” will reveal the opportunity (& scale) over the next 2 or 3 years
- ▶ A lot of initial uncertainty has been apparent due to legislative bumps and hitches with the PPWR process as it is being imposed, so.....

Key drivers & drag anchors - Summary

- ▶ Consumer opinion – ecological demands increasing
- ▶ Retailer response – appealing to consumer's ecological demands
- ▶ Brand Owner actions – active, but struggling to meet environmental targets
- ▶ Legislation – is onerous & causing delays for future investments
- ▶ Plastics Industry – they are not “sitting on their hands”, they are very active

Plastics opportunity - Summary

- ▶ Available Barrier Solutions (including non-plastic versions)
- ▶ Pack Technical Specifications
 - Plastic composite variants
 - Laminated & extruded plastic barriers
 - Sealable plastic lids
 - Coated liners
 - Spot & patch gluing on packs
- ▶ Need for intense & robust Packaging Development
- ▶ Investments to Packing & Filling lines needed
- ▶ Significant investment into more effective Recycling Plants and into upgrading of Recycled Mill facilities for handling of mixed waste

Potential Winners - Summary

- ▶ Folding Cartons
- ▶ Corrugated Moulded Fibre
- ▶ Paper Bags
- ▶ Honeycomb
- ▶ Liquid cartons
- plus....*
- ▶ A few other niche fibre pack formats (e.g. glassine, etc.)

*.....the most favoured will be those where the packaging is **easiest to recycle**.*

Strategic Conclusions

- ▶ Non-Barrier Board (NBB) opportunity estimated as 0.5m tonnes
- ▶ Barrier Board Pack (BBP) opportunity estimated as at least 0.7m tonnes
- ▶ The opportunity for NBB is now and BBP is forecast to be by 2028
- ▶ Both Microflute corrugated (23% by tonnage) as well as Folding Cartons (77%), supplied in composite “Hybrid” pack formats, likely to be the winners for BBP
- ▶ The key players may not be the current market leaders or traditional competitors, they may well be “challenger” companies we haven’t even heard of yet!
- ▶ Today’s “challengers” are coming from “left field”(e.g. Xampla, Kelpi, NotPla, etc.) while others are coming from conventional routes (e.g. GPI, VGP, CEPAC, etc.)
- ▶ The best opportunities lie within the Chilled end use market sector (especially for protein, produce and ready meals), followed by Frozen, Dairy and Ambient fruit & vegetables
- ▶ The UK is a key leader for new PR pack launches, to date

The Future

- ▶ The opportunity is here
- ▶ Consumers are demanding fibre solutions
- ▶ Brand Owners and Retailers are keen for new solutions
- ▶ The fibre supply chain needs to co-operate, co-ordinate and work together
- ▶ Folding Cartons, Corrugated, Paper Bags, Moulded Fibre and Other fibre sources are all after this opportunity
- ▶ The prize is (at least) 1.5m tonnes of new fibre
- ▶ This will come through innovation and investment

Neil Osment – NOA

Some more background to NOA...

- ▶ Formed in 2005 after a career working for Smurfit Kappa, SAICA, ALCOA and DS Smith
- ▶ NOA purchased the PRISM database from Simon Southern in 2013
- ▶ NOA purchased the HPC database from Henry Poole in 2023
- ▶ Contactable on www.noa.uk.net or scan here.....



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