



FPA

Flexible Packaging
Association

Connecting. Advancing. Leading.

Flexible Packaging: STATE OF THE INDUSTRY REPORT

AIMCAL R2R Conference USA 2017

With SPE's FlexPackCon

October 16-18, 2017

Tampa, Florida

Alison Keane, Esq.
President and CEO

- Trends Driving the Growth of Flexible Packaging
- State of the Industry Globally
- State of the Industry in the US
- Protecting that Growth in the US

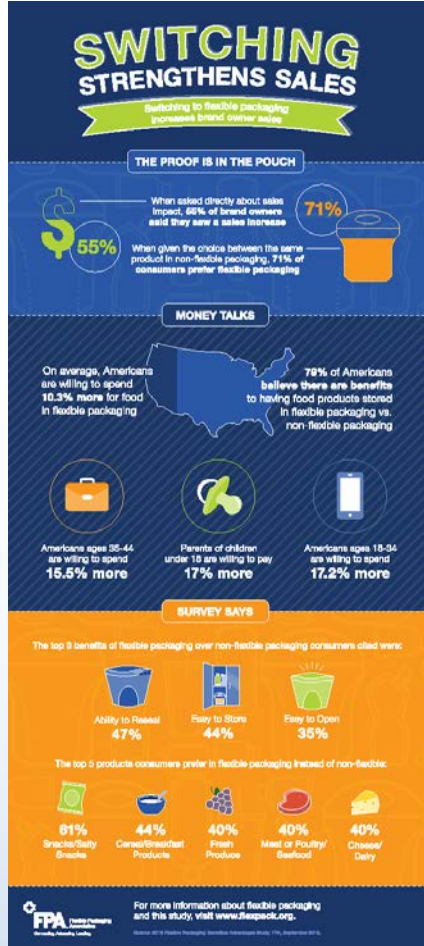


Trends - As Consumer Behavior Goes, so Goes Branding and Packaging



- Brand Value Study
 - The purpose of the study was to better quantify the impact our members' packaging technologies have for brand owners. Key insights include:
 - Packaging has a positive documented impact on brand value.
 - 81% of consumers said they “always,” “often” or “sometimes” notice when a product appears in new or different packaging.
 - 39% of consumers said they “always,” “often” or “sometimes” buy a product specifically because of new or different packaging.
 - 80% of brand owners agree packaging attributes influence their brand's value. Brand owners felt the top attributes are:
 - "Enhance brand image"
 - "Protect the product"
 - "Differentiate the product on the shelf"
 - "Fit consumers lifestyles"





- Brand Value Study

- Consumers are willing to pay more for certain product attributes enhanced by flexible packaging.

- Approximately 60% of consumer respondents said they would be willing to pay more for tangible, functional packaging benefits such as:

- "Ability to reseal"
 - "Ability to extend product life"
 - "Easy to store"
 - "Easy to open"

- The average price premium consumers said they were willing to pay was as high as 14% for the top attribute, ability to reseal.

Trends – FPA Consumer and Brand Research



- Transitioning Advantages Study
 - The study was conducted to better quantify the impact of switching from non-flexible packaging to flexible packaging.
 - Key findings of the Brand Owner Survey included:
 - Continued growth in flexible packaging is projected.
 - 58% of respondents who have already transitioned to a higher mix of flexible packaging intend to use more in the future.
 - More respondents overall expect to transition to a higher mix of flexible packaging in the next five years (31%).



- Transitioning Advantages Study
 - Brand owners who transitioned to more flexible packaging cited operational benefits and ability to meet consumer needs as reasons for the shift.
 - Among those who increased use of flexible packaging, reasons cited most frequently for the shift were reduced production cost (49%) and shipping/transportation efficiencies (45%).
 - Brand owners also said convenience (45%) and fitting consumer lifestyle trends (39%) are benefits that influenced them to transition to flexible packaging.
 - Brand owners who switched to using more flexible packaging in the last five years saw strong business results.
 - Among those who increased use of flexible packaging in some way, 57% were able to lower costs of production.
 - 55% of those who increased their use of flexible packaging reported a sales improvement.

- Transitioning Advantages Study
 - Key findings of the Consumer Survey included:
 - Consumers favor flexible packaging over non-flexible packaging.
 - When consumers were asked to choose between flexible and non-flexible packaging for a product they were considering purchasing (assuming the product was exactly the same and only the packaging differed), 71% of Americans said they would prefer flexible packaging over non-flexible packaging.
 - Seventy-nine percent of Americans believe there are benefits to having food products stored in flexible packaging versus non-flexible packaging.
 - Consumers are willing to pay more for food stored in flexible packaging.
 - 46% of Americans are willing to pay more for food products stored in flexible packaging than they would for food products stored in non-flexible packaging.



Trends – Top Attributes of Flexible Packaging



- Portability
- Portion Control
- Convenience
- Freshness
- Sustainability

The Building Blocks of Growth

Emerging
Markets

Growing
Middle
Classes

Innovation
Adoption

The Global Middle Class and Global Flexible Packaging



By The Numbers



- **1.8 Billion People in the Middle Class**
- **3.2 Billion Expected by 2020**
- **4.9 Billion Expected by 2030**
- **66% of Global Middle Class Represented by Asia**
- **1 Billion Chinese as Part of Middle Class by 2030**

World Flexible Packaging Market 2016 Total \$86 Billion



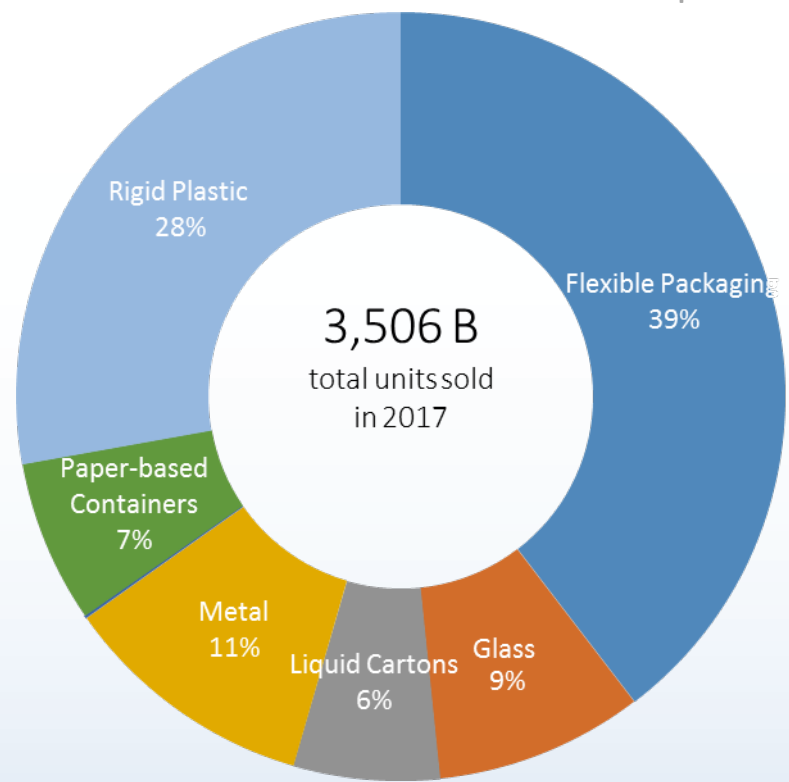
COUNTRY / REGION	% Flexible Packaging Market	Population in Millions	% World Population	Per Capita Consumption in US \$
Europe	21	739	10	24.43
N America	27	363	5	63.93
Total-Developed Countries	48	1102	15	37.45
C & S America	6	648	9	7.97
Asia Pacific	41	4518	60	7.80
Africa / Middle East	5	1247	16	3.45
Total-Developing Countries	52	6413	85	6.97

Source: PCI Films Consulting per Flexible Packaging Europe Presentation at 2017 FPA Annual Meeting, Population Reference Bureau and Flexible Packaging Association

Global Overview: Packaging Overview by Type: Global Total 2017



Global Volume share of pack types , 2017



Executive Summary - takeaway

- Total Packaging will grow 11% by 2021
- Absolute Growth of \$394 Billion
- Flexible Packaging: 1,388B
- Glass: 307B
- Liquid Cartons: 21.4B
- Metal: 37.5B
- Other Packaging: 4.5B
- Paper-based Containers: 239B
- Rigid Plastic: 975B

Total 2017 market size	3,506 bn
Total 2021 market size	3,900 bn
Forecast Absolute Growth(2017-2021)	11%

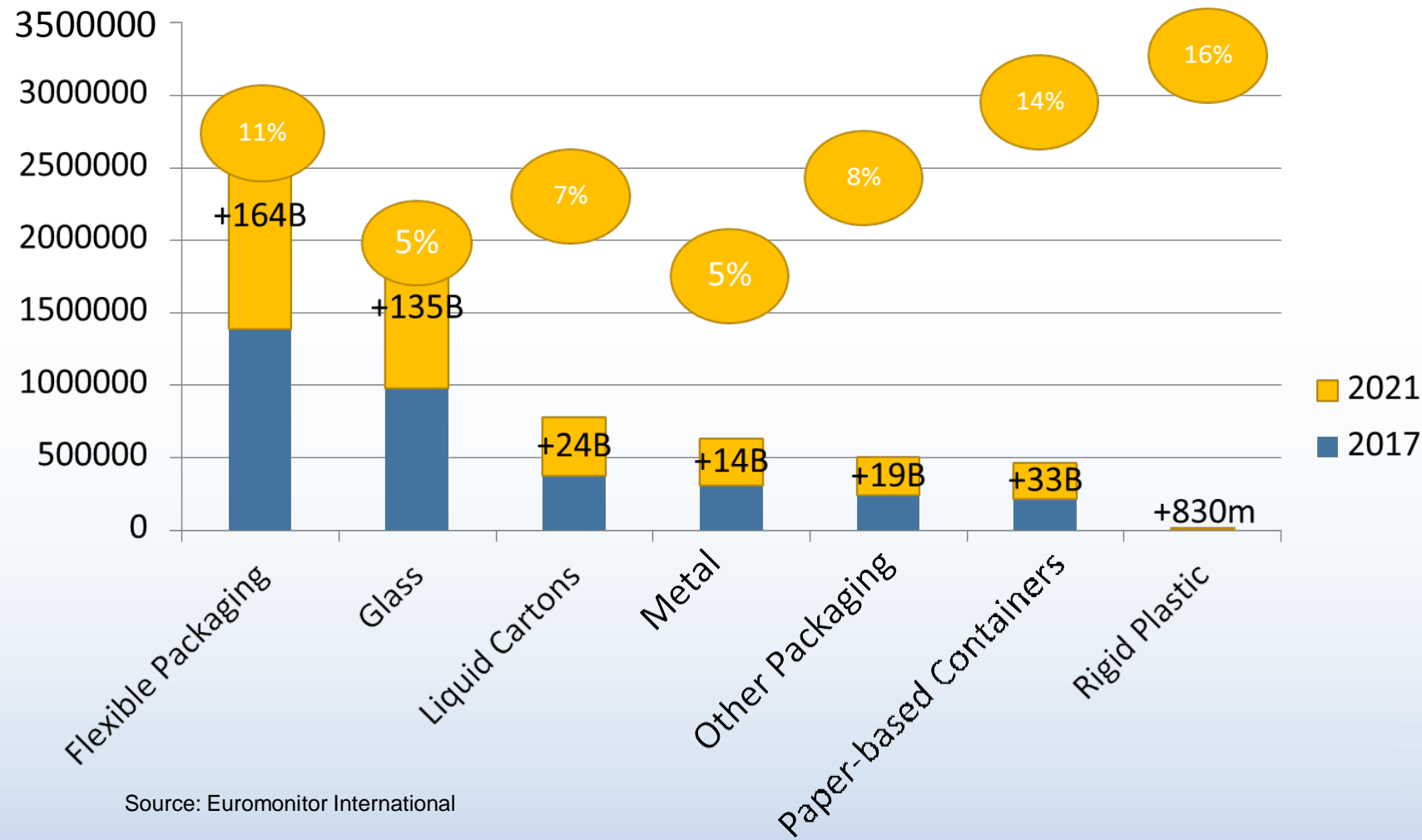
Source: Euromonitor International

Global Totals by Package Type by 2021

Absolute Growth %



Retail/off-trade Unit volume



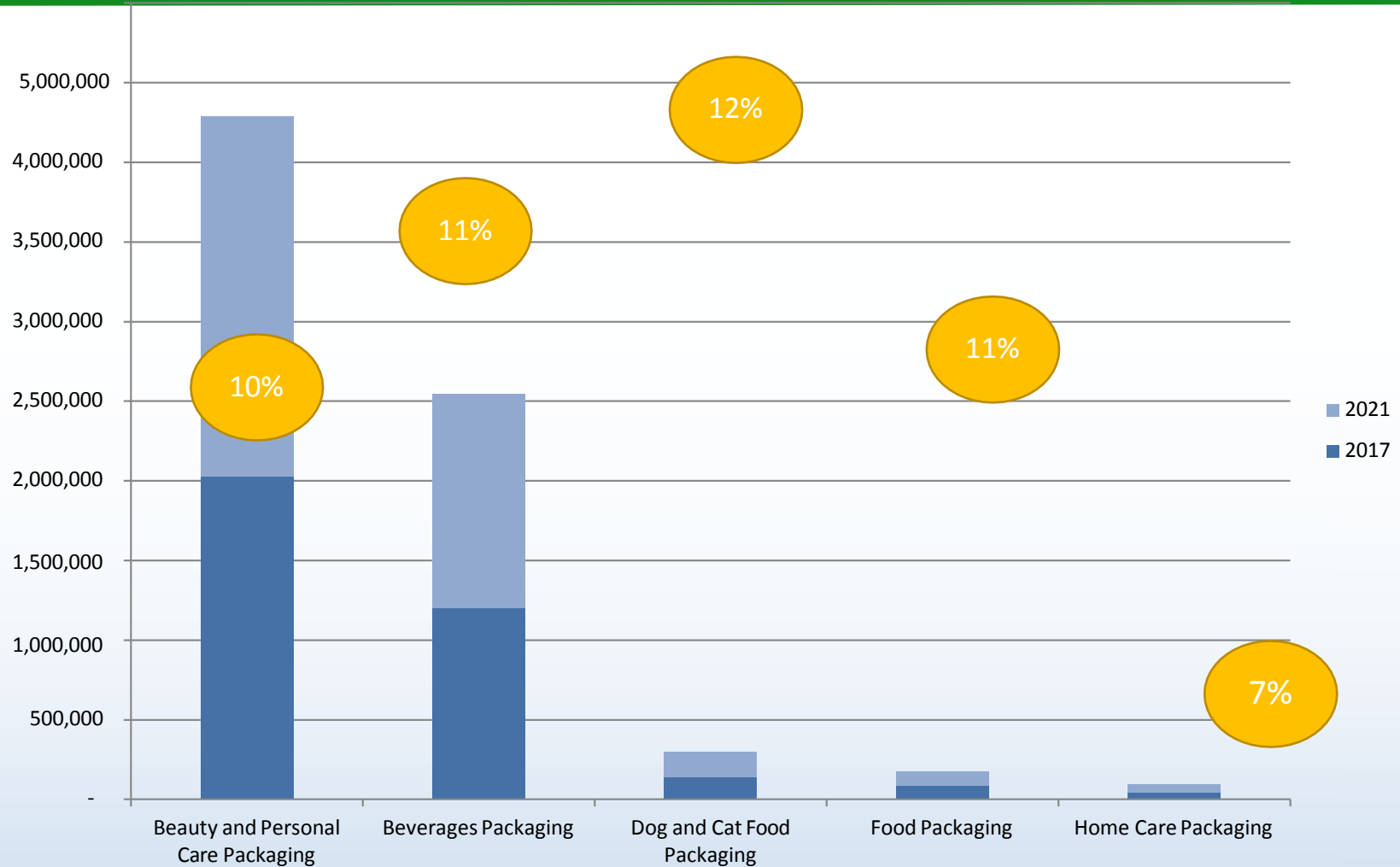
Source: Euromonitor International

Global Totals By Industry 2021

Absolute Growth %



Retail/off-trade Unit volume



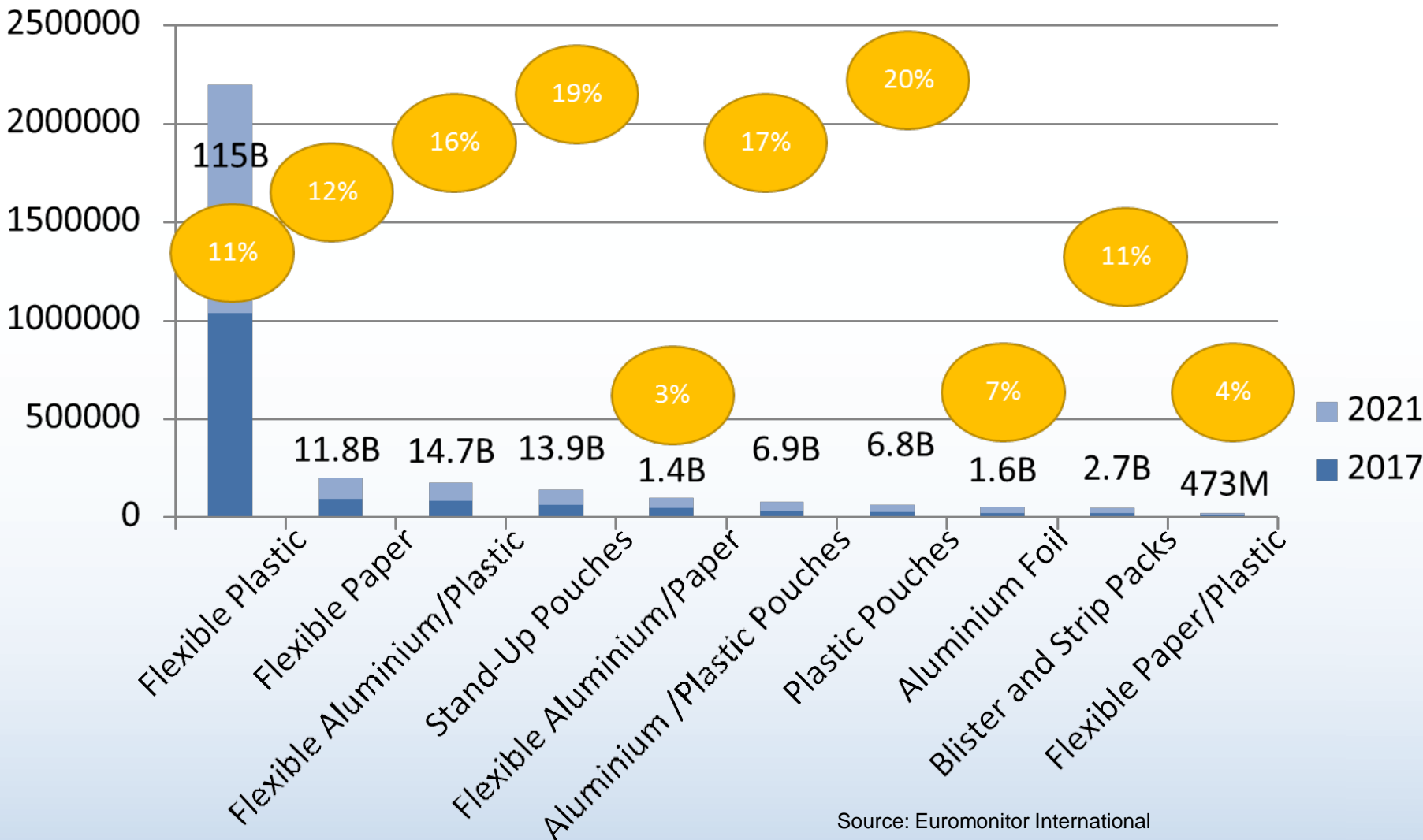
Source: Euromonitor International

Global Growth of Flexible Packaging by Type

Absolute Growth %



Retail/off-trade Unit volume



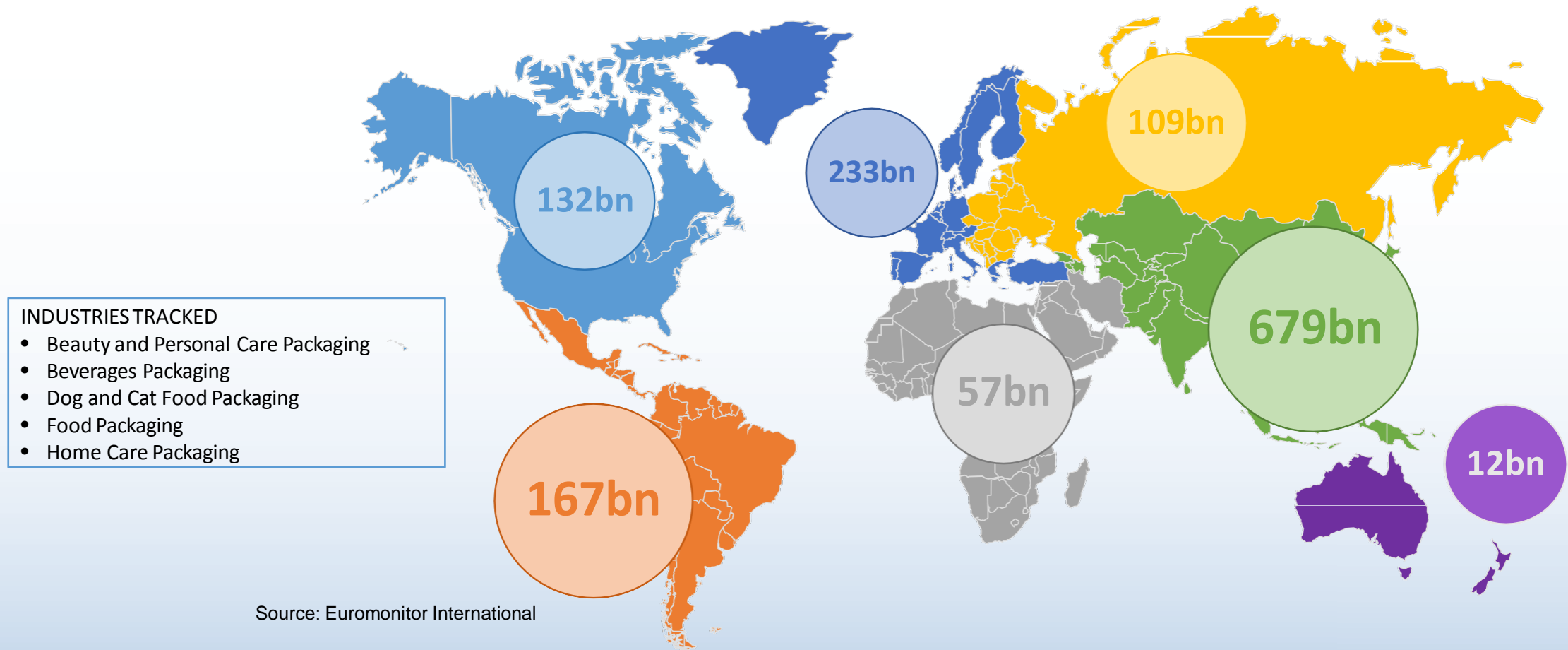
Source: Euromonitor International

Flexible Packaging to Grow Across the World



Asia Pacific making up 24% of global totals

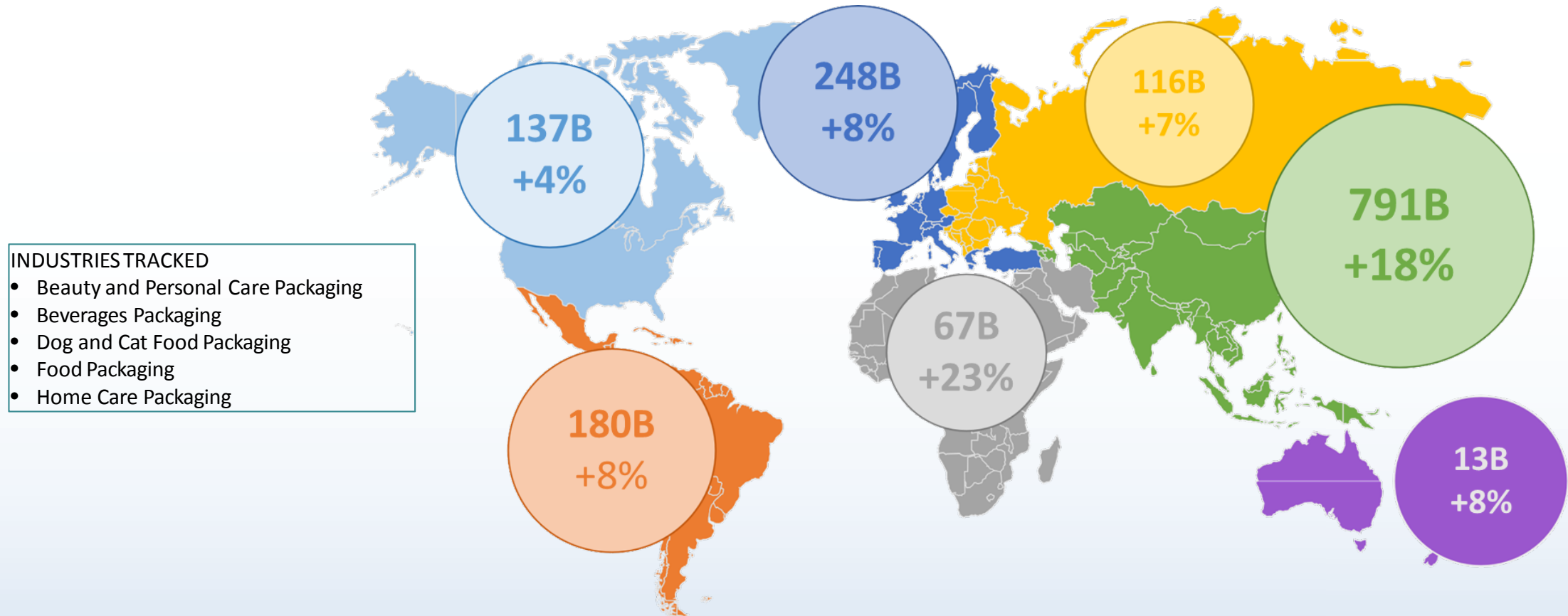
Absolute volume totals (2017) by region in billions of units



Global Flexible Packaging Retail 2021 Outlook



Flexible Pack retail volume



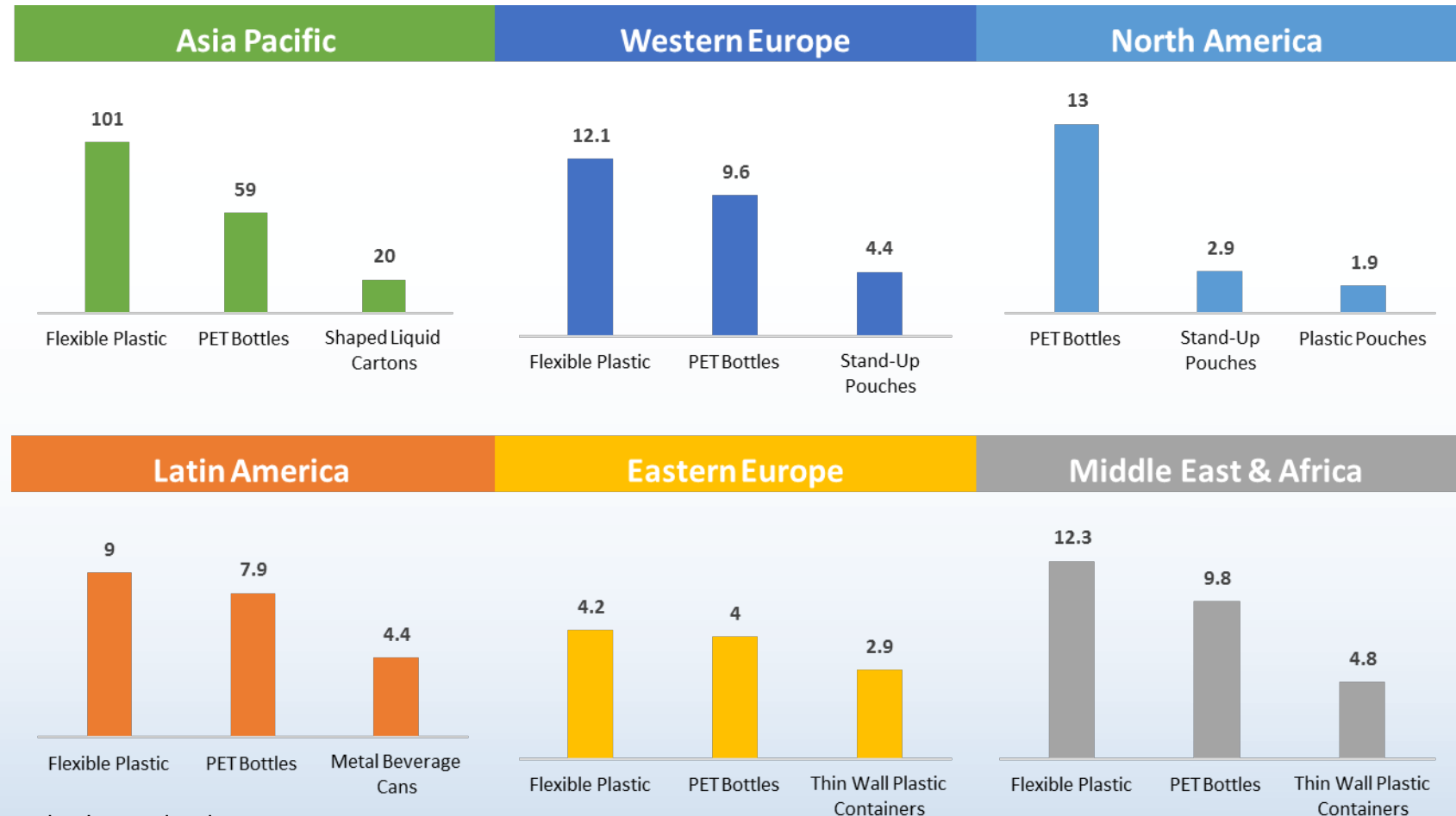
Source: Euromonitor International

Flexible Plastic Will See Growth



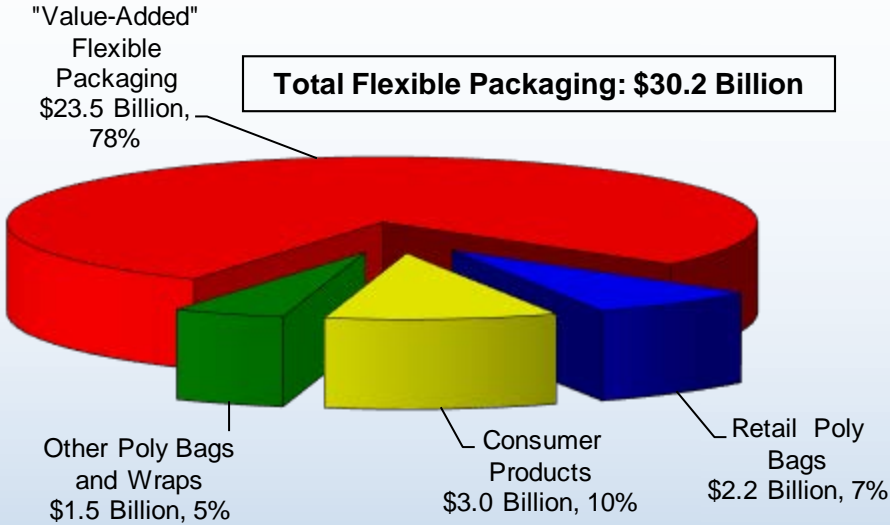
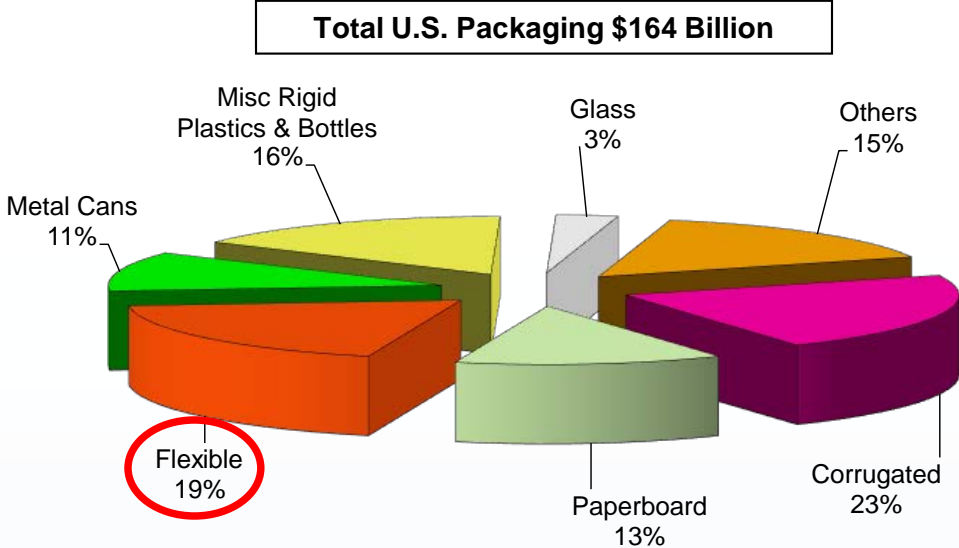
- Affordability
- Light weight
- Growth in packaged foods overall

Top Pack Types by Absolute Volume Growth by Region (in billions of units); 2016 – 2021



Source: Euromonitor International

U.S. Packaging Industry



Source: U.S. Census Bureau 2015 ASM Census and FPA estimates for 2016 total revenue

U.S. Flexible Packaging Overview



Metric	2000	2009	2016
Number Companies	665	410	419
Manufacturing Facilities	1010	970	952
Employees	89 Thousand	<80 Thousand	~79 Thousand
Sales per Employee	\$221K	\$290K	\$382K

Source: U.S. Census Bureau and Flexible Packaging Association 2001 and 2010 State of the Industry Reports and 2016 State of the Industry Survey preliminary data

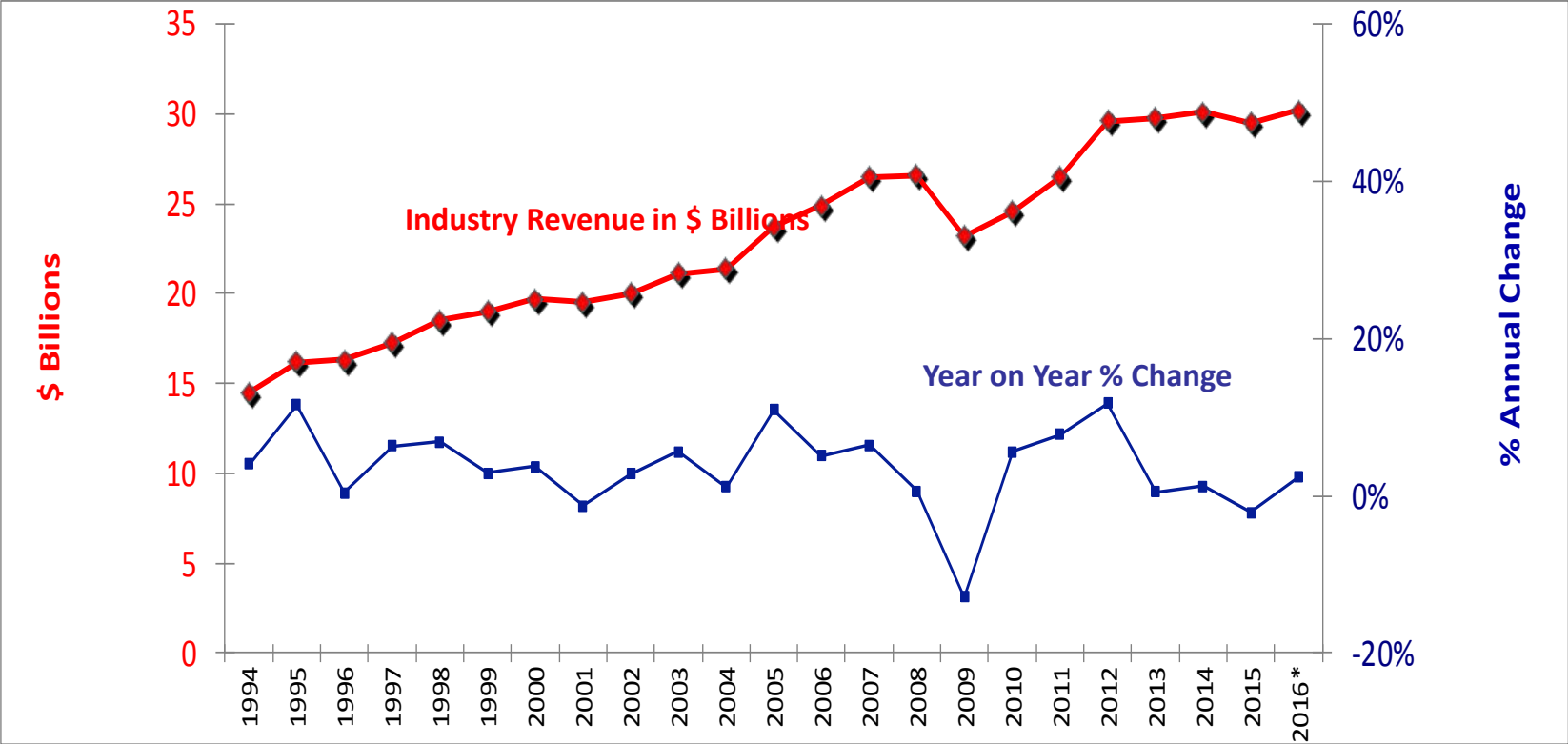
U.S. Flexible Packaging Industry Growth



Growth	2000	2009	2016
Total Flexible Packaging Industry	\$19.7 B	\$23.2 B	\$30.2B
Compound Annual Growth Rate (CAGR) last 10 years	4.2%	2.0%	1.9%
Profit over previous year	Up	Down	Flat
Volume		Down	Up Slightly
\$ Growth	3.7%	-12.9%	2.4%
Benchmark GDP	4.1%	-2.8%	1.9%

Source: U.S. Census Bureau and Flexible Packaging Association 2001 and 2010 State of the Industry Reports and 2015 State of the Industry Surveys preliminary data

FPA Industry Revenue



Source: U.S. Census Bureau and Flexible Packaging Association

* FPA Estimate

U.S. Flexible Packaging Industry Expenses & Profitability (2014-2016)

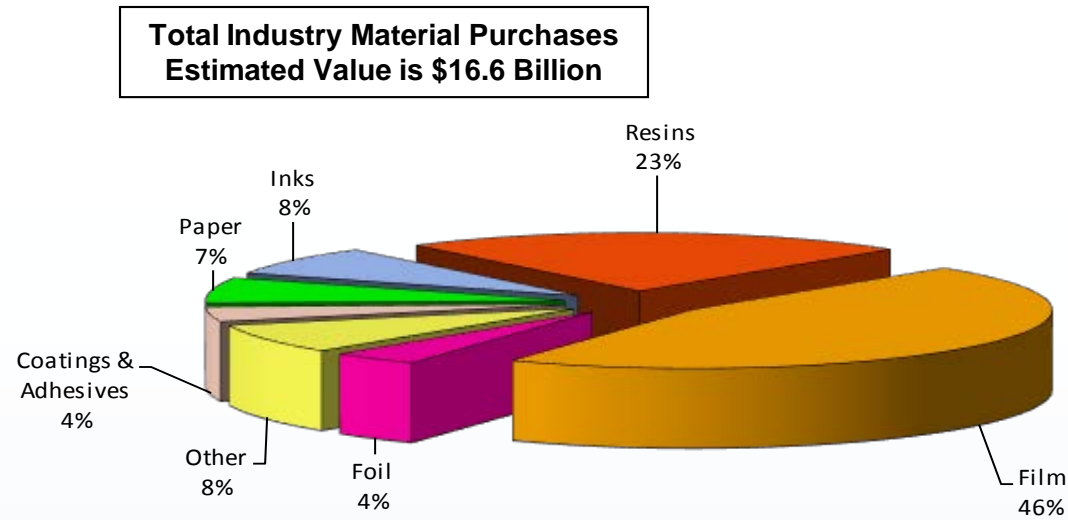


	% of NET SALES		
	FPA (2014)	FPA (2015)	FPA (2016)
Materials	58	58	55
Direct Labor	9	9	10
Sales, Marketing, Research & Development and Administrative	10	11	11
All Other Manufacturing	17	15	17
Profit before Tax (EBIT)	6	7	7

Source: 2014 and 2015 State of the Industry Reports, 2016 preliminary data from 2015 SOI Surveys

Converters Material Purchases

Flexible Packaging is composed of 90% plastic



Film

- Polyethylene: 41%
- Polypropylene: 28%
- Polystyrene: <1%
- Polyester: 16%
- Nylon: 3%

Resin

- Polyethylene: 79%
- Polypropylene: 14%
- Polystyrene: >1%
- Polyester: 1%
- Nylon: 1%

Source: FPA 2016 State of the Industry Survey preliminary data

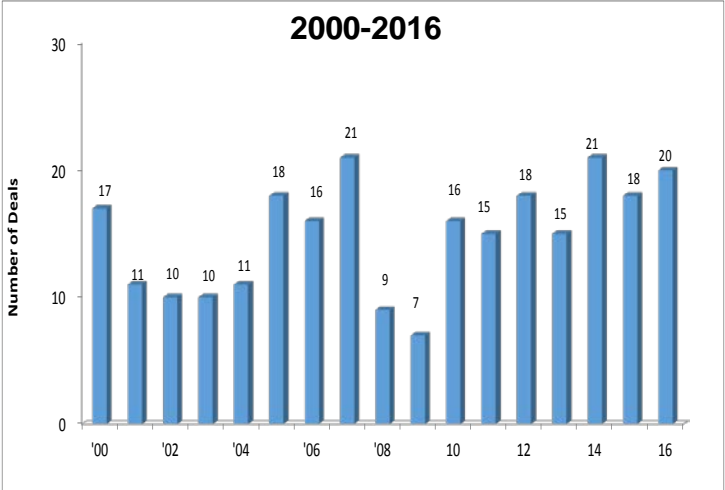
Converters Printing Comparison % of Shipments



PRINT TYPE	2010	2014	2016
FLEXO	64%	63%	72%
GRAVURE	9%	11%	12%
OFFSET & OTHER	1%	3%	4%
DIGITAL		<1%	<1%
UNPRINTED	26%	22%	12%

Source: FPA 2011-2015 State of the Industry Reports & FPA 2016 State of the Industry Survey preliminary data

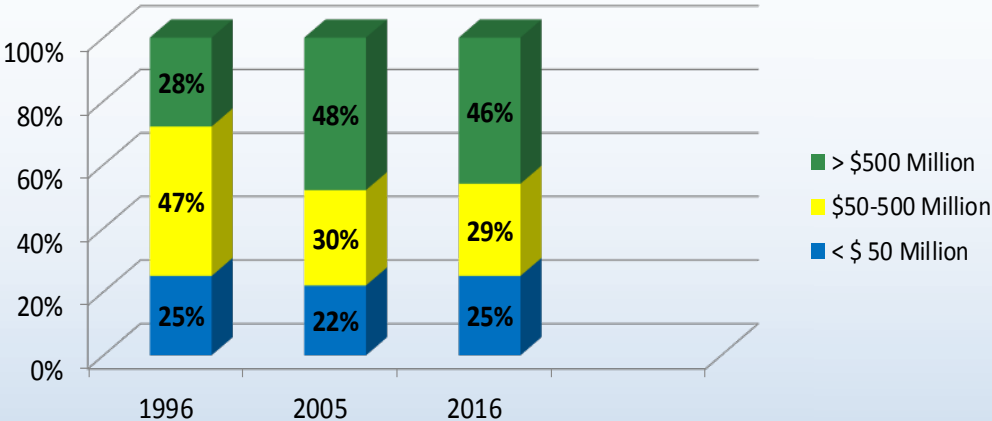
U.S. Flexible Packaging M&A Activity



% of Total U.S. Flexible Packaging Industry Revenue

- Top 5 Converters account for 33%
- Top 10 Converters account for 44%
- Top 50 Converters account for 61%
- Top 100 Converters account for 68%

U.S. Flexible Packaging Industry by Company Size 1996-2016



Source: FPA State of the Industry Reports, FPA Master Converter Company List & FPA accumulated M&A data for 1996-2016

U.S. Flexible Packaging (20) Mergers and Acquisitions 2016



Purchasing Company	Company Acquired
Amtcor Flexibles	Deluxe Packages
Prolamina Corp.	Coatings Excellence International
Novolex	Heritage Bag Company
Inland	Valley Label
Tekni-Plex, Inc.	Scancap Liner Technology, Inc.
Bemis Company, Inc..	SteriPack Group
Oliver-Tolas Healthcare Packaging	Mangar Medical Packaging
Transcendia	Dow Specialty Films business
Fort Dearborn Company	Sleevco, Inc.
TC Transcontinental Inc.	Robbie Manufacturing

Source: FPA accumulated M&A data for calendar year 2016

Mergers and Acquisitions, cont.



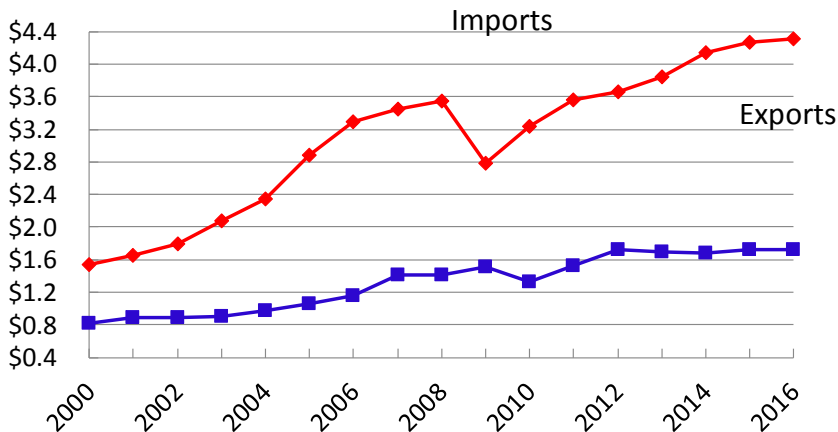
Purchasing Company	Company Acquired
Kent Corporation	PouchTec Industries, LLC
Berry Plastics Group, Inc.	AEP Industries, Inc.
Pregis LLC	3M protective films business
Sigma Plastics Group	Alliance Barrier Films, Inc.
Pritzker Group Private Capital	ProAmpac
ProAmpac	Vitex Packaging Group
Sonoco Products Company	Plastic Packaging, Inc.
The Carlyle Group	Novolex
WindPoint Partners	Paragon Films
CCL Industries, Inc.	Innovia Group

Source: FPA accumulated M&A data for calendar year 2016

Flexible Packaging Imports And Exports



Billions of Dollars



- 87% of FPA Members Export
- 5.6% of U.S. Flexible Packaging Production is Exported
- 13.1% of U.S. Flexible Packaging Consumption is Imported
- U.S. Flexible Packaging trade deficit is about \$2.6 Billion

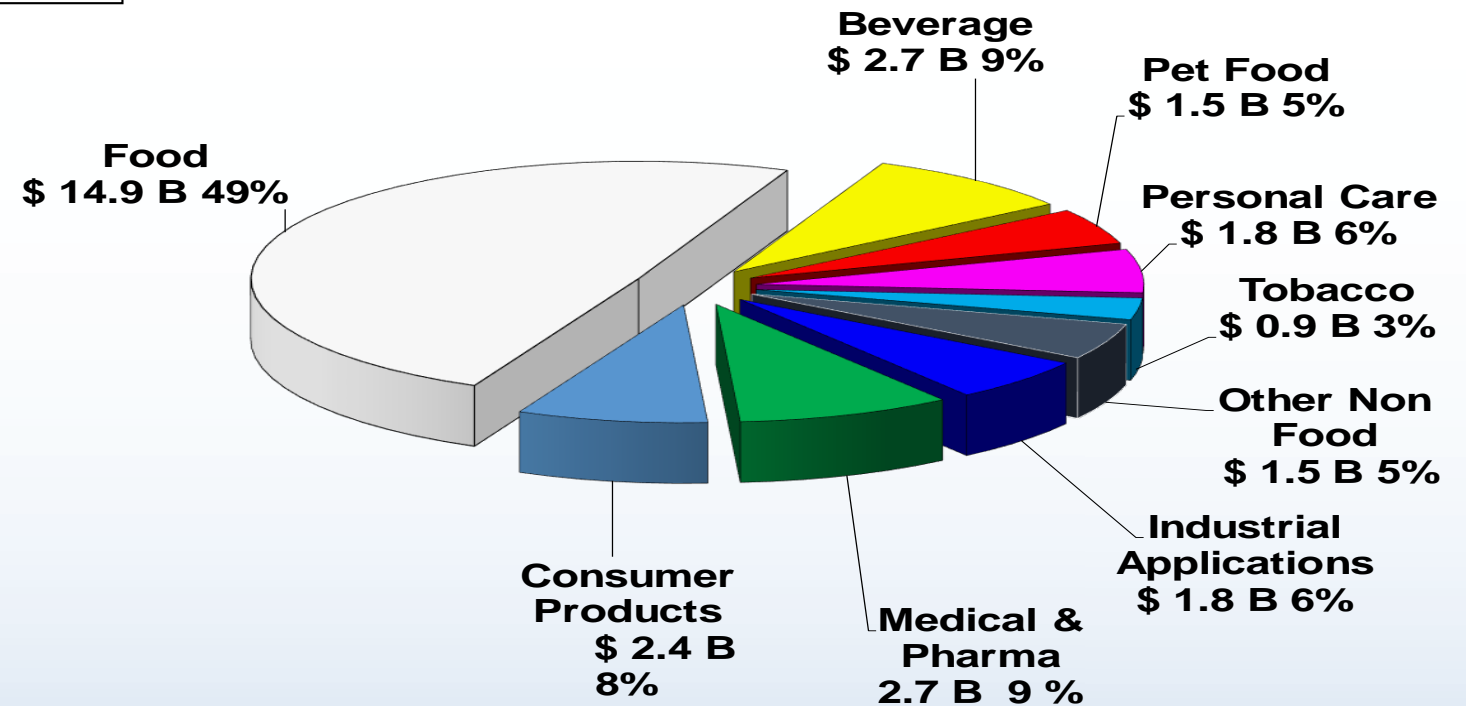
	Import	Export
• Bags: Plastic, Laminated and Coated	74%	63%
• Bags: Paper	5%	5%
• Foil and Leaf: Flexible Packaging	21%	32%

Source: U.S. Census Bureau, Foreign Trade Division
Calculations by the Flexible Packaging Association

\$1.7 Billion Exports to:		\$4.3 Billion Imports from:	
Canada	35%	China	44%
Mexico	35%	Canada	16%
United Kingdom	5%	Mexico	7%
Dominican Republic	2%	Thailand	4%
Japan	2%	Germany	4%

U.S. Packaging End-Use Markets

**Flexible Packaging Sales by
End-Use Market: \$30.2 Billion**



Source: FPA 2016 State of the Industry Report data

Percent of Total U.S. Packaging & Flexible Packaging by End-Use



Market	% of Total Packaging	% of Flexible Packaging	2016-2021 Flexible CAGR
Beauty & Personal Care	3 %	2 %	-0.6 %
Beverages	46 %	5 %	+0.2 %
Dog & Cat Food	2 %	2 %	+1.6 %
Food	37 %	68 %	+0.7 %
Home Care	2 %	<1 %	+2.1 %
Tissue & Hygiene	2 %	5 %	+0.2 %
Tobacco	8 %	18 %	-0.3 %
Total Packaging	100 %	100 %	+0.8 %

Source: Euromonitor International Passport Data - the number of packaging units sold to consumers through all retail channels.

U.S. Flexible Packaging Unit Volume Growth Potential (Food)



Market	2011-2016 CAGR	2016-2021 CAGR
Baby Food	+24.4 %	+2.1 %
Biscuits & Snack Bars	+1.6 %	+1.1 %
Dairy Packaging	0.9 %	+1.2 %
Processed Fruits & Vegetables	+5.7 %	+3.0 %
Processed Meat & Seafood	+0.2 %	+1.3 %
Ready Meals	+1.1 %	+1.2 %
Sweet & Savory Snacks	+2.8%	+1.8 %
Soup Packaging	+3.4%	+0.2%

Source: Euromonitor International Passport Data - based on the number of packaging units sold to consumers through all retail channels.

U.S. Flexible Packaging Industry: The Road Ahead



- Now well ahead of 2009 pre-Recession levels
- Consolidation is expected to continue
- Opportunities are strong:
 - Brand owners overall expect to transition to a higher mix of flexible packaging over the next five years
 - Consumers are willing to pay more for food products in flexible packaging
- Material composition and “End of Life” challenges accelerating
- FPA responding to industry challenges and opportunities



The Bad News

WHAT'S IN THE PACKAGE?

Unveiling the Toxic Secrets of Food and Beverage Packaging

4,000 to 6,000 chemicals are used in food packaging and less than 15% of those have been reviewed for safety.

Food packaging chemicals migrate into food and into our bodies.

Many are known or suspected endocrine disruptors, or exhibit carcinogenic, mutagenic, or reproductive toxicity.

3,700 food packaging chemicals have been deemed safe by the manufacturers that use them, without FDA oversight.

Trade secret laws and poor regulation mean companies can keep the contents of your packaging secret.

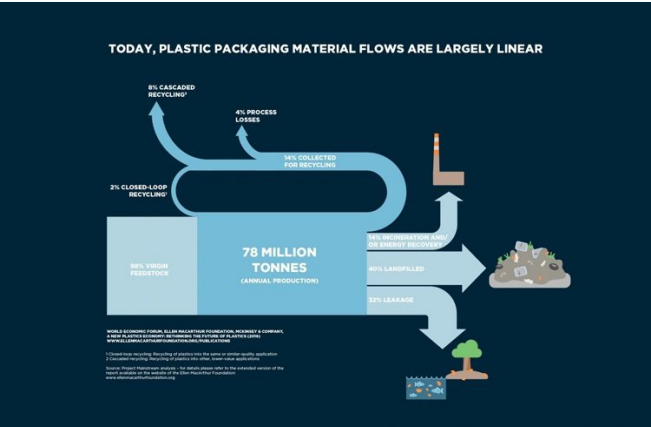
We have the right to know what's in the package!

SOLUTIONS:

Change California law! Put it on the package!
No trade secrets on chemical ingredients!

CLEAN WATER ACTION

To find out more, go to cleanwateraction.org/toxicpackaging



Let's tell the Good Story!



Flexible Packaging Extends Shelf Life



Flexible Packaging Reduces Food Waste (by days)

Zucchini, 1 → 5	Broccoli Florets, 6 → 20	Fresh Sliced Turkey, 14 → 21
Green Beans, 7 → 19	Bell Pepper, 4 → 20	Lamb Steaks, 8 → 13
Banana, 15 → 36	Mango, 20 → 40	Provolone Cheese, 190 → 280
Table Grape, 7 → 70	Ground Beef, 3 → 20	Fresh Swordfish, 7 → 12
Cherries, 14 → 28	Beef, 14 → 23	
Pear, 7 → 15	Whole Chicken, 7 → 20	

Source: FPA Value of Flexible Packaging in Extending Shelf Life and Reducing Food Waste Report
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Sterilization
Packaging
Manufacturers
Council



- FPA Created an Advocacy Committee
 - Working to raise the profile of the industry and educate policy makers
- Two States currently threatening the industry over solid waste management issues:
 - Connecticut Task Force to reduce consumer packaging
 - California Packaging Reform Workgroup
- Reports for both, with recommendations for legislation, anticipated by the end of the year



- Testified at and commented on CT Taskforce on reducing, reuse and recycling of consumer packaging
 - Task force made up of industry, NGOs, and Government
 - Expect balanced report with tools for minimization, recovery and recycling
 - Outcome really depends on Legislature
- Participated in and commented on CA Packaging Reform workshops aimed at curbing non-recyclable consumer packaging
 - Met with 12 Assembly offices at the beginning of the session
 - Discussed alternatives with Assemblyman Quirk, Chair, Environmental Committee, who has agreed to work with us
 - Draft Report out – CalRecycle looking for broad authority to regulate

- CalRecycle Screening Criteria for Problem Packaging Products
- Stage 2 Remedies:
 - Product Ban
 - Mandatory “Non-Recyclable” Labels
 - Extended Producer Responsibility (Producer pays for new collection and recycling infrastructure)

Stage 1B: Identifying Priority Packaging

Example application of screening criteria to three plastic categories:

	Film plastic	PET containers	HDPE containers
1. Prevalence in Disposed Waste Stream	1	0	-1
2. Usage Trends	1	1	1
3. Current Collection Infrastructure	1	-1	-1
4. Current Processing Infrastructure	1	-1	-1
5. Greenhouse Gas Impacts of Recycling	0	0	-1
6. Waterway and Marine Debris	1	0	-1
Final Prioritization	5	-1	-4

For individual criteria, priority is assigned as 1 (high), 0 (medium), or -1 (low).

CalRecycle Packaging Reform Workshop, 10/10/2017

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FPA Legislative Outreach Campaign



- Facilitated Legislator/Member visit/tours
 - Senator Mendoza visited Amcor Flexibles in CA) – 11.16
 - Senator Pan visited Liqui-Box Corporation in CA) – 11.16
 - Representative Garcia visited Amcor Flexibles in CA – 1.17
 - Senator Hernandez visited NOVOLEX™ in CA – 1.17
 - Representative Kulik visited Charter NEX Films, Inc. in Connecticut 1.17
 - Senator Rosenberg visited Charter NEX Films, Inc. – 1.17
 - News Coverage:
https://www.dropbox.com/s/xrs3oucvokeyweap/1.13.17_Channel22_WWLP.mp4?dl=0



FPA Legislative Outreach Campaign



- Facilitated Legislator/Member visit/tours
 - Governor Dan Malloy and State Senator Heather Somers visited Davis-Standard in Connecticut – 7.17
 - State Senator Kathy Osten visited Amgraph in Connecticut – 8.17
 - State Assemblyman Quirk visited Emerald Packaging in California – 9.17
 - State Senator Frank Lasee visited B&W MEGTEC in Wisconsin – 9.17
 - State Senator Roger Roth visited Sun Chemical in Wisconsin – 9/17
 - State Senator Jay Hottinger and Representative Scott Ryan visited Ampacet Corporation in Ohio – 10.17
- 2 More Scheduled
 - State Representative Robert Heaton will visit Berry Global in Indiana – 10.17
 - State Senator Donne Trotter will visit ISOFlex Packaging in Illinois – 10/17

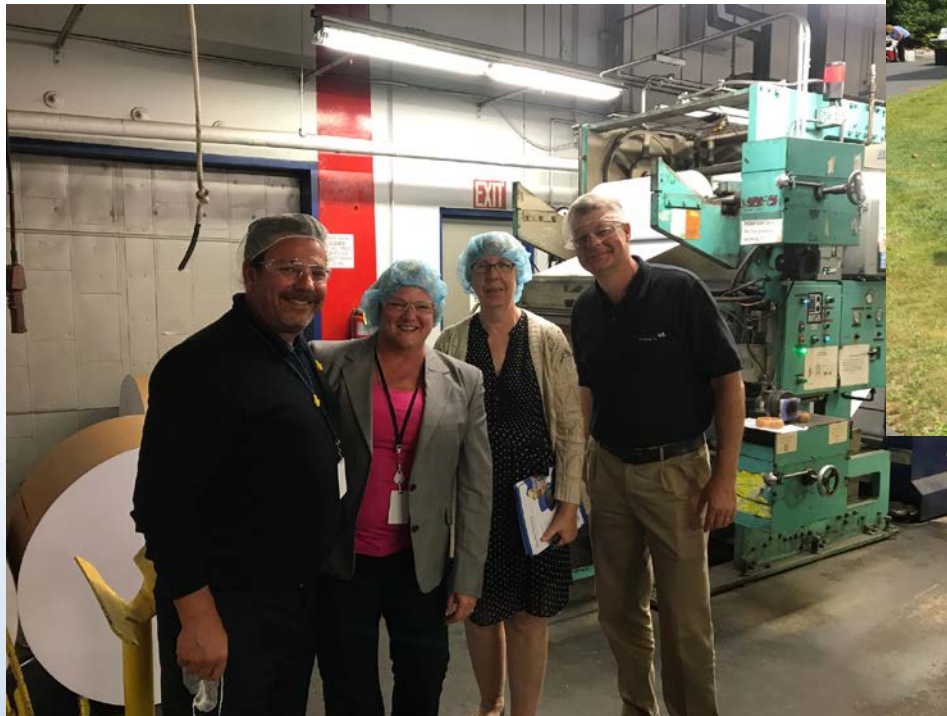
Facility Legislator Visits



Facility Legislator Visits



Facility Visits



Facility Visits



Media



Advocacy - State



- Exhibited at the National Conference of State Legislators
 - Largest gathering of state legislators and their staff
 - Over 5,000 state legislators, legislative staff, government officials, business representatives, and others interested in public policy attend



- International Trade Commission (ITC) petition from the Aluminum Association claiming that dumped and subsidized aluminum foil from China is causing or threatening injury to the domestic aluminum foil industry
 - 3 companies: JW Aluminum Company, Novelis North America, and Reynolds Consumer Products
 - FPA formed Aluminum Foil Converters Committee with affected members to oppose the petition
- Section 232 Investigation initiated on all Aluminum Imports to determine national security threat



Aluminum Foil - ITC

- Preliminary ITC Hearing
March 30th
 - FPA Members testified in opposition:
 - Amercian Packaging Corporation
 - Amgraph Packaging
 - Bemis Company, Inc.
 - Oracle and LLFlex
 - Rollprint Packaging Products
 - Sonoco Products Company



- Preliminary Report recommended continuation with the investigation
 - Did not exempt thin-gauge foil as a separate like product, but recognized opponents arguments:
 - U.S. aluminum foil selling prices were not kept down by Chinese imports (“we cannot conclude that subject imports depressed the prices of the domestic like product to a significant degree due to the linkage between aluminum foil prices and raw material costs.”).
 - U.S. aluminum foil producers were not prevented from raising prices by Chinese imports (“We consequently do not find that subject imports prevented price increases which otherwise would have occurred to a significant degree.”).
 - Domestic ultra-thin foil production “may be limited or nonexistent.”
 - Domestic flexible packaging manufacturers may deserve standing as domestic producers in this case as converters of aluminum foil.
 - Despite their arguments about economic harm by imports, domestic aluminum foil manufacturing jobs declined by only 137 workers from 2014-2016.

Aluminum Foil - ITC

- Given continuation of the investigation – case transferred to Department of Commerce to set countervailing (CVD) and anti-dumping duties
- August 8th CVD preliminary duties imposed (retroactive):

Exporter	CVD Rates
Jiangsu Zhongji Lamination Materials Co., Ltd.,	16.56%
Dingsheng Aluminium Industries (Hong Kong) Trading Co., Ltd	28.33%
Manakin Industries/ Suzhou Manakin	80.97%
Lofton	80.97%
All Others	22.45%



- Final Phase
 - October 4th – preliminary anti-dumping duties (retroactive) POSTPONED
 - Early-October – ITC questionnaires for final phase sent to importers and purchasers
 - November/December – questionnaires due
 - Mid-February – ITC final hearing
 - End-March – ITC final decision (Appealable)
- Final Duties
 - Mid-February (prospective)
 - Refunds given if successful at final hearing
 - Adjusted once a year if unsuccessful at final hearing

Aluminum Foil – Section 232

- Administration initiated a Section 232 investigation under the Trade Expansion Act of 1962 on April 26th
 - little used statute; generally reserved for war time
 - seeks to determine what, if any, effects imports of aluminum have on national security
 - scope broad enough to encompass foil
 - all imports (not just China)
- 9 months under the statute to report on the investigation, but “fast tracked” to June
 - quotas, tariffs or bans

Aluminum Foil – Section 232

- FPA Testified at and commented on the Department of Commerce's Section 232 work
- Initiated federal advocacy campaign
 - Visited w/over 20 federal offices (Senate and House)
 - Facilitated visits by Federal Representative Glenn Grothman to ProAmpac and Bemis in Wisconsin – 7.17



- Produced factsheet, talking points, numerous letters from members and through coalitions (GMA, CMI, Trinidad, etc.)
- Generated numerous letters from Representatives on FPA's behalf
- Stalled a fast track investigation; optimistic that either no remedies or no impact from final report.



Aluminum Foil – Section 232

- Report is now stalled and not expected till end of year
- Optimistic that remedy will be none or a tariff/rate quota that does not negatively impact the industry



What's Next?



- FPA will continue to monitor and respond to industry threats at the national and state/local level.
- FPA will partner with other industry associations and stakeholders to get the word out – flexibles are the sustainable solution and plastics protect!
- New FPA sustainability study and consumer communication/outreach campaign expected in 2018.

Thank You!

akeane@flexpack.org

410-694-0800