



State of the U.S. Flexible Packaging Industry

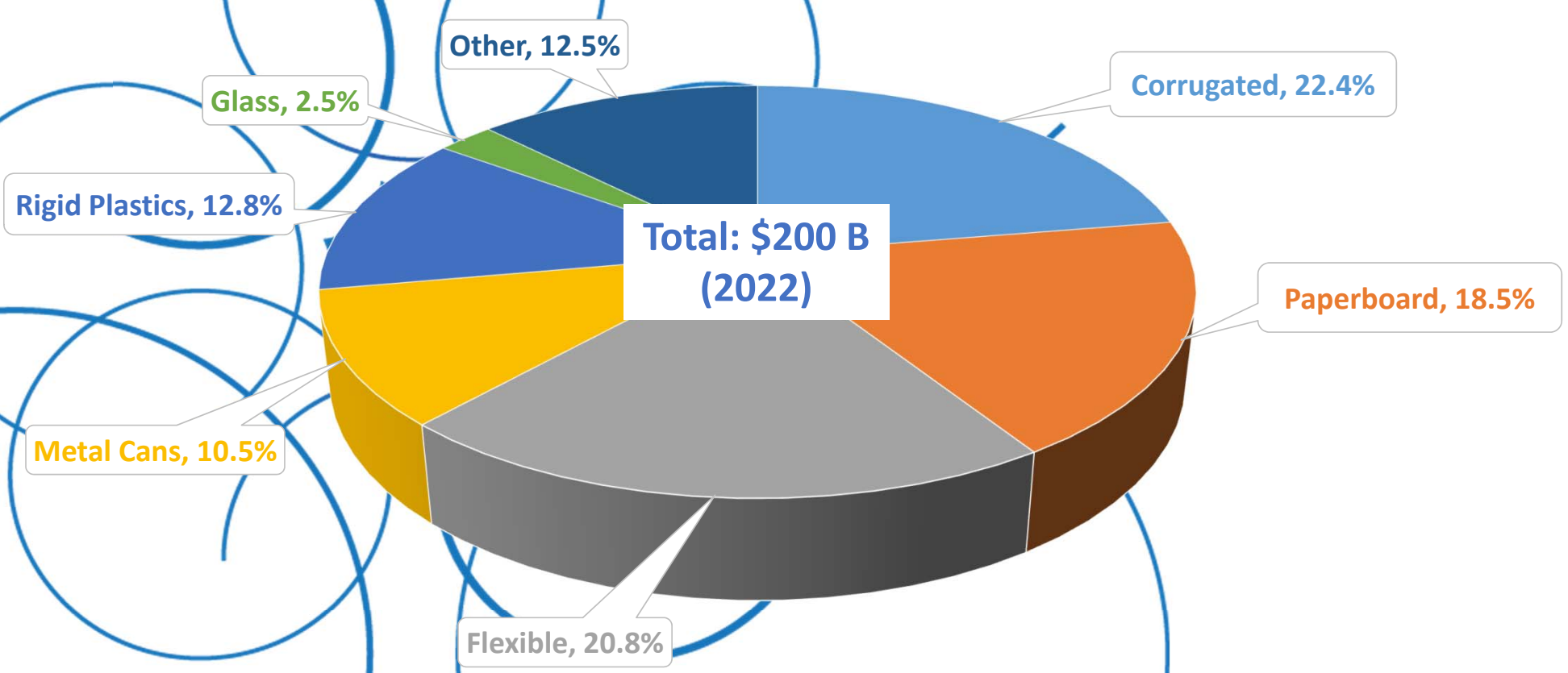
Alison Keane, Esq., CAE, IOM
President & CEO
April 15, 2024



Let's Talk About Flexibles!

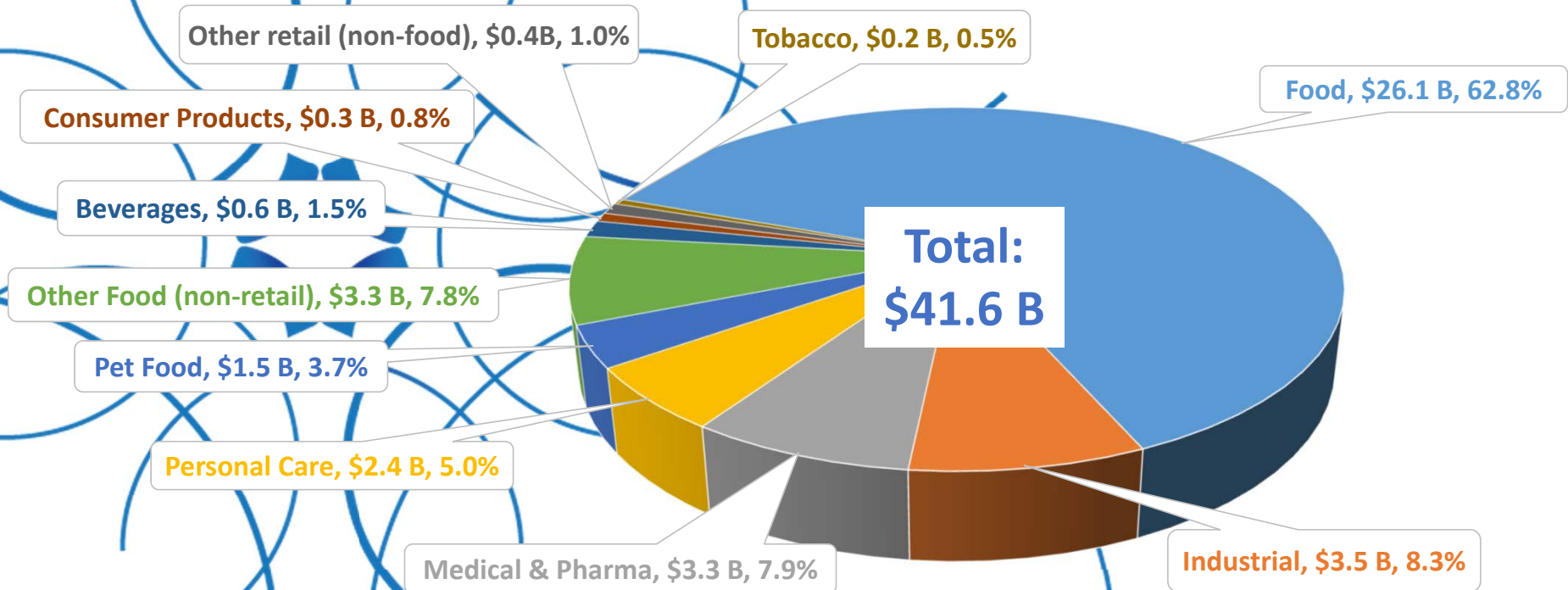


Total U.S. Packaging Market % Breakdown by Segment



Source: Inforum (2024)

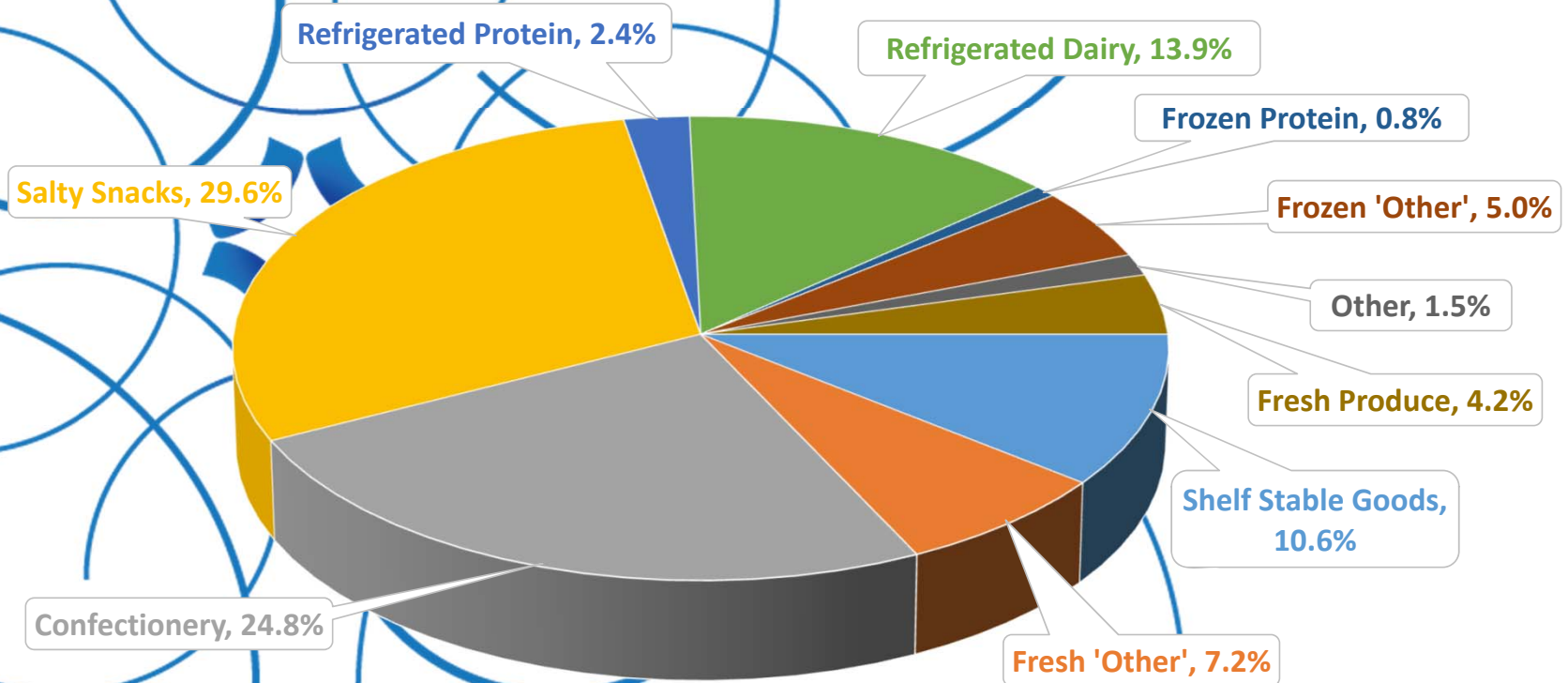
U.S. Flexible Packaging Industry Breakdown By End-Use Market 2023



Source: 2024 State of the U.S. Flexible Packaging Industry Survey
Industry size (2022) based on Inforum recalculation – March 2024

Note: Average used for calculation. There is insufficient data to report Institutional (non-food), Shipping, and Nutraceuticals

Food – Flexible Packaging % by Category By Market 2023



Source: FPA 2024 State of the U.S. Flexible Packaging Industry Survey

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Economic Impact of the Flexible Packaging Industry



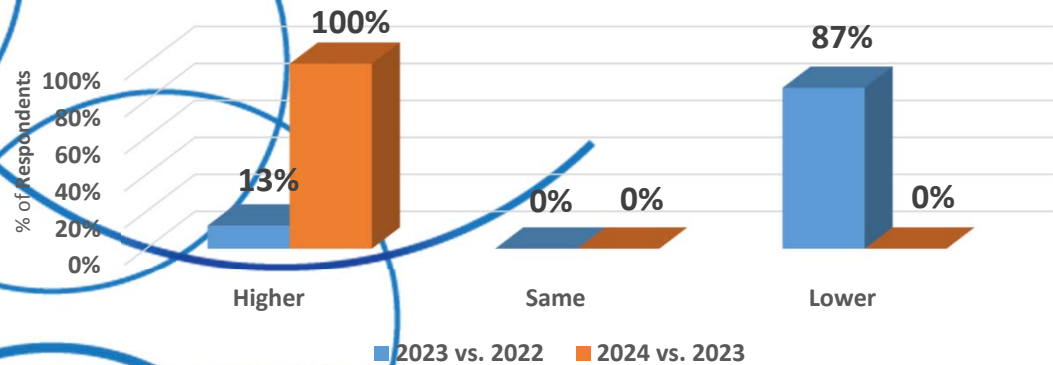
	Employment (1,000 persons)	Labor Income (Billion \$)	Value Added (Billion \$)	Output (Billion \$)
Direct	\$83.0	\$7.2	\$10.9	41.5
Indirect	\$112.2	\$10.2	\$19.7	48.9
Induced	\$120.9	\$7.9	\$14.4	25.4
Total	\$316.1	\$25.3	\$45	115.8

Source: Inforum and the U.S. Census Bureau

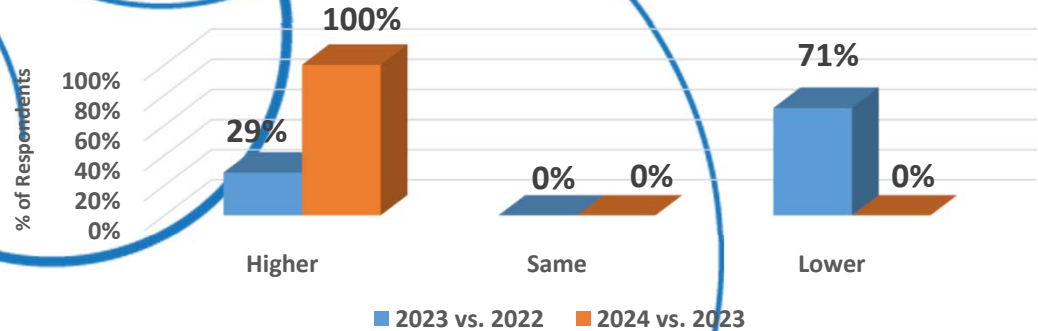


Converters' Sales Revenue and Volume Performance

Converters' Sales Revenue (\$) Performance 2023 vs. 2022 and Expected 2023 vs. 2024

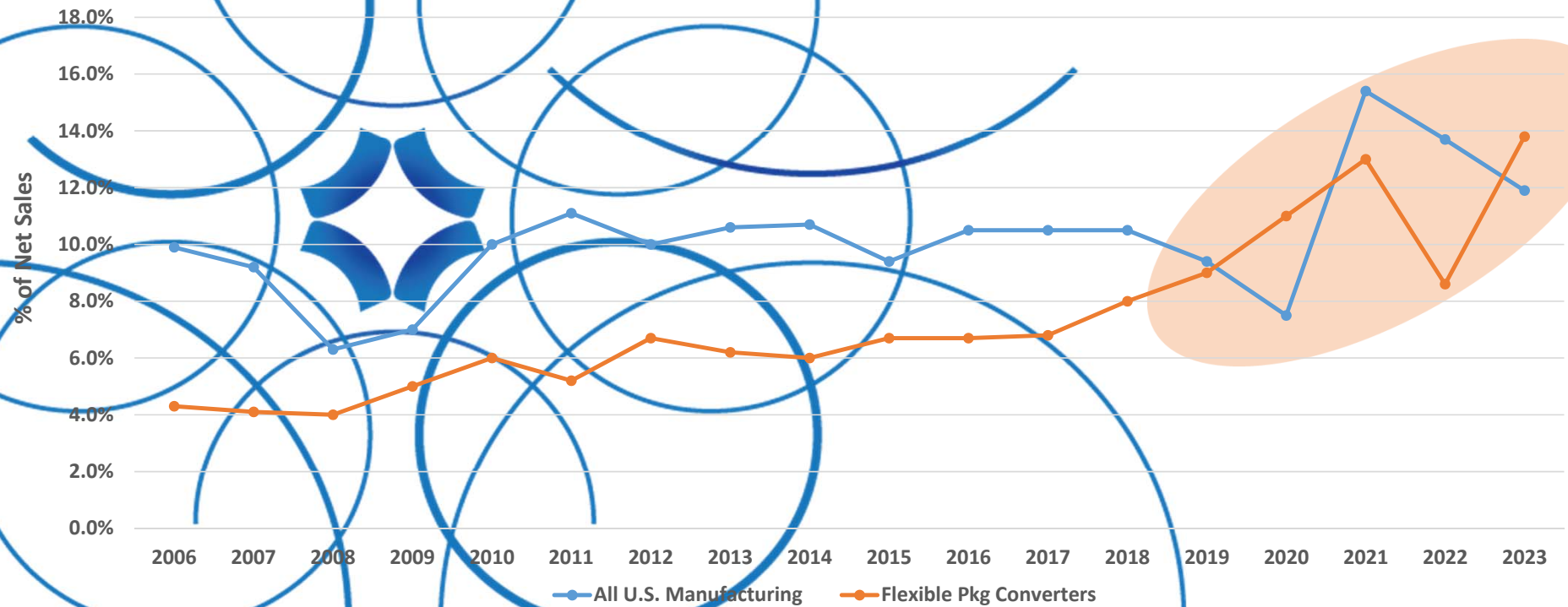


Converters' Sales Volume Performance 2023 vs. 2022 and Expected 2023 vs. 2024



Source: FPA 2024 State of the U.S. Flexible Packaging Industry Survey

Profit Before Tax as a % of Net Sales



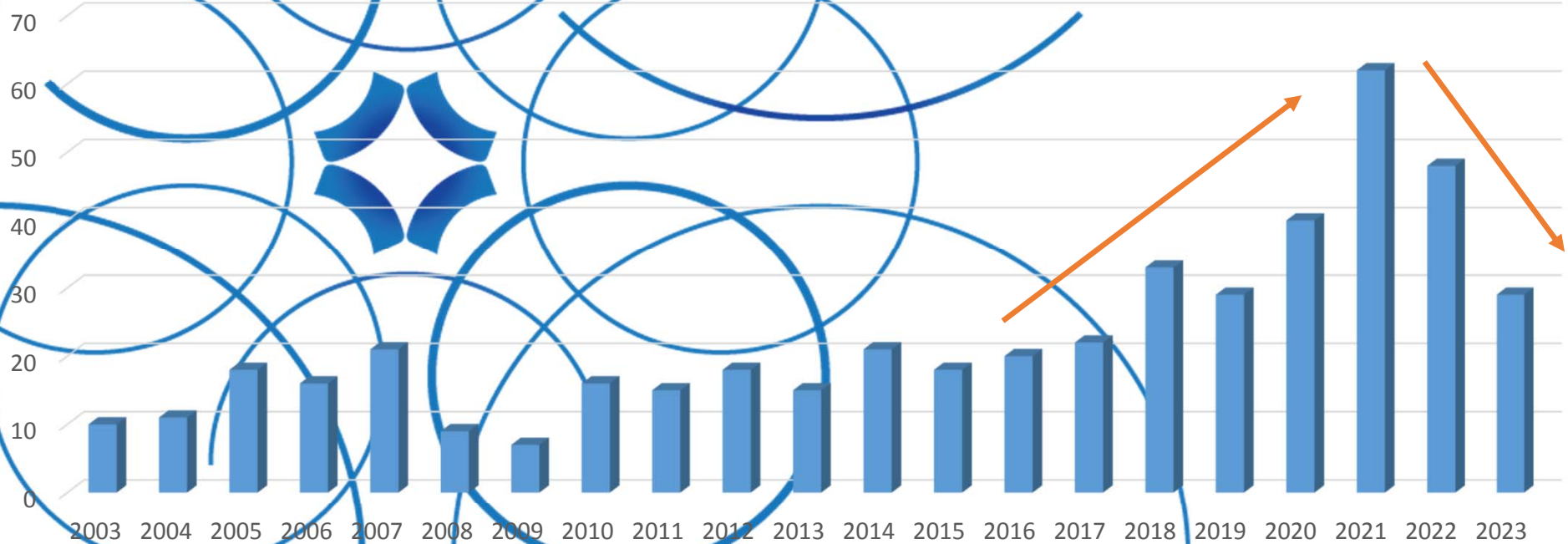
Source: FPA 2024 State of the U.S. Flexible Packaging Industry

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Flexible Packaging M&A (2003-2023)



U.S. Flexible Packaging Domestic Mergers & Acquisitions for 2003-2023



Source: FPA *State of the Industry Reports*, FPA accumulated M&A data for 2023, precedent flexible packaging transactions, and PMCF

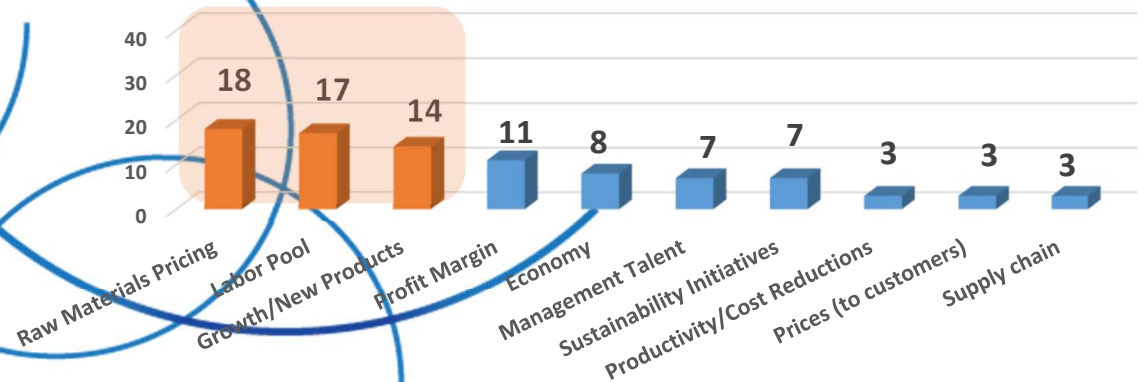


Converter & Supplier Most Important Issues

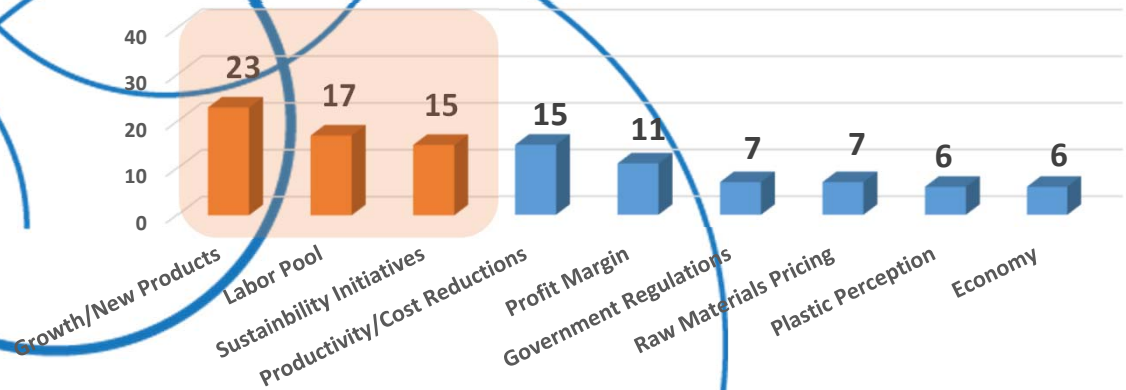
Relative importance based on combined rank totals.

Weighted 1-5, with 5=most important

Converters' Most Important Issues



Suppliers' Most Important Issues



Source: 2024 State of the U.S. Flexible Packaging Industry Survey

U.S. Flexible Packaging Unit Volume Growth Potential

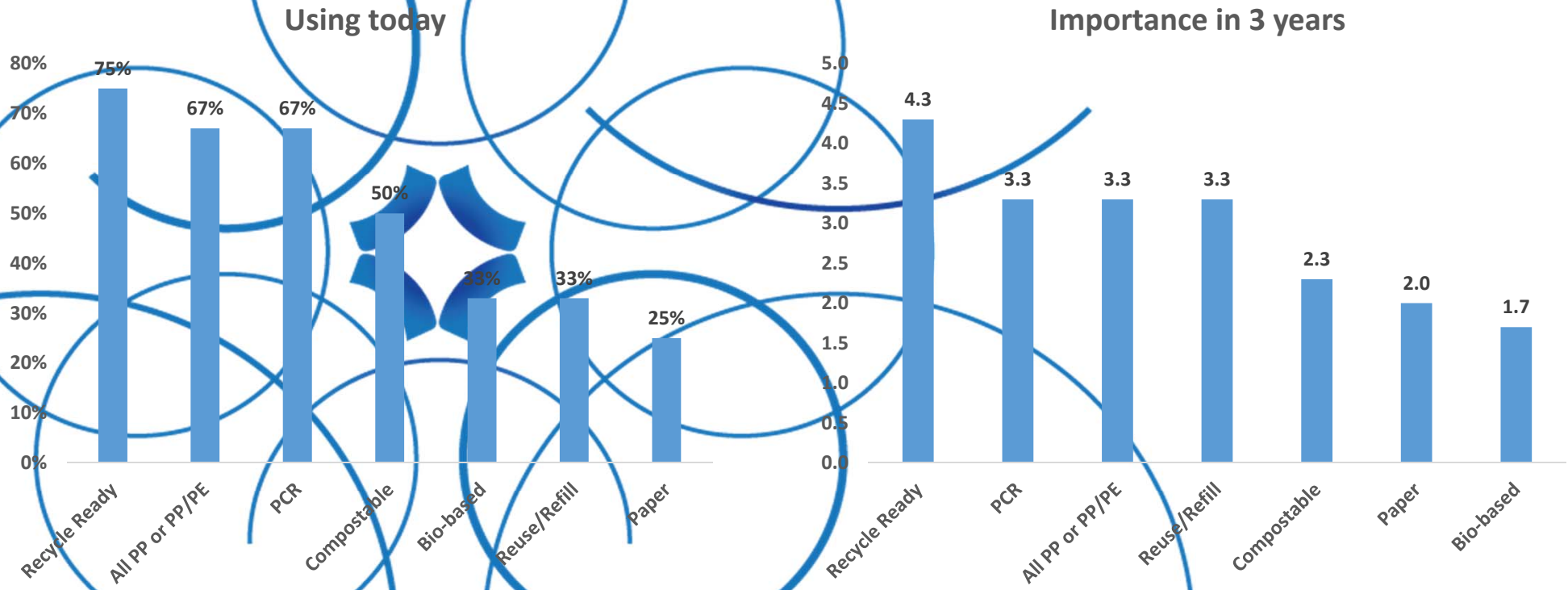


Market	2019-2024 CAGR	2024 - 2027 CAGR
FOOD	2.1%	2.3%
Plant-based Dairy	9.2%	7.9%
Dried Baby Food	12.4%	7.5%
Food Kits	2.5%	16.2%
Chocolate Pouches & Bags	6.0%	5.9%
Shelf Stable Fruit & Vegetables	10.5%	5.0%
Meat Snacks	6.5%	4.8%
Savory Snacks	4.7%	3.7%
Sugar Confectionery	2.4%	3.4%
Snack Bars	0.6%	3.3%
Chocolate Spreads	15.9%	8.5%
BEVERAGES	-0.8%	-1.1%
Tea	9.5%	3.8%
Juice	-1.8%	-2.1%

Market	2019-2024 CAGR	2024 - 2027 CAGR
HOME CARE	1.4%	2.1%
Liquid Air Fresheners	3.3%	2.6%
Detergent Tablets	5.0%	5.1%
Laundry Care	3.7%	3.7%
DOG & CAT FOOD	4.8%	2.6%
Cat Treats & Mixers	11.7%	6.8%
Cat Food	7.1%	4.7%
Dog Treats & Mixers	2.5%	-0.2%
Dog Food	2.9%	0.6%
BEAUTY & PERSONAL CARE	0.3%	-0.9%
Liquid Soap	8.1%	4.5%
Adult Sun Care	4.2%	2.8%
Hand Sanitizers	12.3%	-3.1%
Facial Makeup	-0.4%	1.9%
Lip Products	-0.5%	1.3%

Source: Euromonitor International Passport Data – March 2024
 Based on the number of packaging units sold to consumers through all retail channels

Sustainability & Emerging Materials



Source: 2024 State of the U.S. Flexible Packaging Industry Survey

Using a scale of 1-5
(5 = Extremely Important / 3 = Moderately Important / 1 = Not Important)



Public Perception of Plastic and Packaging

- Push to eliminate plastic and plastic packaging continues, with a new emphasis on toxics

- Regardless of sustainability and lifecycle implications
- Regardless of recyclability and compostability
- Not just an ENGO issue anymore



SAY NO TO PLASTIC

Brand's Packaging Circularity Goals

- Ellen MacArthur Foundation's (EMF) Global Commitment
- US Plastics PACT/Plastics Pollution Treaty (INC)
- U.S. SEC ESG/Proxy Votes
- State EPR Mandates
 - Recyclable as well as Recycled; PCR; Reduction; Toxics
 - Labeling
- Canadian Plastic Pollution Prevention Programs



Corporate

- Investor Focus on ESG Criteria
- Brand Perception
- EPR
- EMF – New Plastics Economy
- Plastics Backlash
- E-commerce
- Package Design
- Refill/Return/Reuse Systems

State Advocacy 2024

• Packaging legislation in:

- Washington (EPR dead)
- Hawaii (Needs Assessment)
- New York (EPR)
- New Jersey (EPR)
- Minnesota (EPR)
- New Hampshire (EPR dead)
- Rhode Island (EPR, Toxics)
- Vermont (Labeling)
- Maine (Labeling, Toxics, Advanced Recycling)
- Tennessee (EPR)
- California (Bag Ban, Toxics)



State Advocacy 2024

- Extended Producer Responsibility
 - California, Colorado, Oregon and Maine
 - Needs Assessment – Maryland, Illinois
 - New states? Election Year...
- PFAS (processing aids)
 - And other “toxics” in packaging legislation
- Advanced Recycling
- PCR Content
- Labeling
 - Recyclability



How2Recycle
Information and locational instructions let you know if an item can be recycled traditionally or by other means.

Widely Recycled	Limited Recycling * Not recycled in all communities	Not Yet Recycled	Store Drop-Off

Flexible Packaging and Circularity – FPA Principles

- Benefits of flexibles need to be promoted and infrastructure investment needs to be prioritized
- A well-crafted extended producer responsibility (EPR) scheme
 - Doesn't ban or restrict the production or sale of flexibles
 - Creates sustainable funding for a dynamic recycling system with advanced recycling infrastructure
 - Harmonization among states or at the federal level
- A suite of options is needed to ensure all packaging is collected, processed, and available for new uses



State Advocacy 2024 – EPR Regulations

- Circular Action Alliance chosen as PRO
 - Oregon, Colorado, California and Maryland
 - Maine and Illinois?
- OR: January 1, 2025 program must be implemented
 - Payment timeframe not dictated
- CO: January 1, 2025 producers pay, prior to program plan submission and approval
 - Implementation tied to scenario and program approval
 - Needs assessment open for public comment
- ME: 2026 producers pay
 - Tied to effective/approval date of PRO
- CA: January 1, 2024 PRO must be formed with participating producers (done)
 - July 1, 2027 Producers must participate?





Federal Advocacy 2024

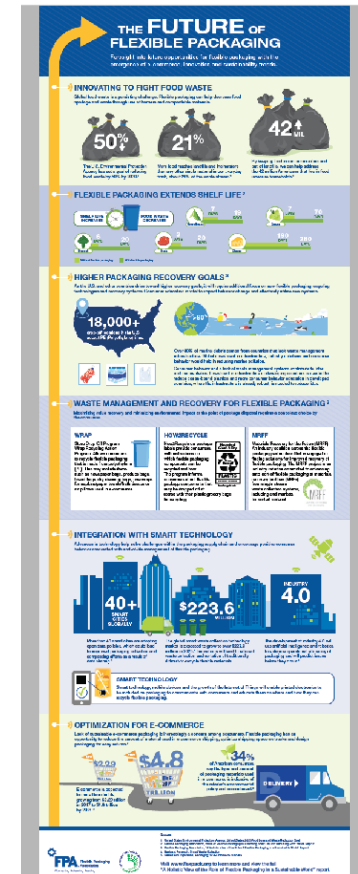
- Labeling for Recyclability
 - Federal Trade Commission Green Guides
 - National Legislation?
- Administration's Strategy for Reducing Food Loss and Waste
- EPA's Strategy to Reduce Plastic Pollution
- Two Federal Bills
 - Recycling Infrastructure and Accessibility Act
 - Recycling and Composability Accountability Act
- Hearing on Federal EPR 3.6.24
- Congressional Chaos/2024 Presidential Election Year
 - Lack of Federal Action Means More State Action
- Canadian Pollution Prevention Plans and Regulations



Challenges

Infrastructure for Collection, Sortation, and Reprocessing

- All 4 EPR laws treat film and flexibles differently
- General lack of access to curbside collection for flexibles regardless of the state
- Store drop-off program in jeopardy
- Preliminary regulations in California state film is not recyclable and can not be labeled as such
- Need prove of concept and scalable solutions for collection, sortation and reprocessing



Solutions

Infrastructure for Collection, Sortation, and Reprocessing

- Coalitions and Partnerships to address film and flexibles circularity and leverage resources



CONSORTIUM FOR WASTE CIRCULARITY





- Renewed TRP Film and Flexible Coalition Membership

- Pilot/Proof of concept for California EPR

- Engaged with the Recycled Material Standard

- The RMS is the most comprehensive third party standard available for recycled materials.

- Full Chain of Custody
- Mass Balance
- Includes Post-Consumer & Post-Industrial Materials
- Multi-Site Certification and Group Certification
- Consensus Body Development Process
- Book and Claim System
- Fuel Exclusion

- Have been asked to join Advisory Committee

Initiatives of





FFRA

FLEXIBLE FILM RECYCLING ALLIANCE

- A collaboration open to all stakeholders ensuring the value & recovery of flexible films and store drop off labels.
 - Operate a **best-in-class plastic film recycling directory**
 - Establish a verification program to ensure data, validity, and robustness
 - Publicly report on program success through annual reports
 - Educate consumers and policymakers on the **benefits of flexible plastic film products**
 - Promote the **responsible use and recycling** of flexible plastic film products
 - Increase recycling opportunities
 - Develop end markets for recycled plastic film and flexibles
 - Educate consumers on **how to recycle** flexible plastic film products

An initiative of



Sustainability Benefits of Flexibles



BENEFICIAL ATTRIBUTES OF FLEXIBLE PACKAGING

Optimizes volume and weight of packaging necessary to protect products as they move through the supply chain



Resource efficient, thus reducing water, energy, and GHG emissions during production, distribution, and use



Protects products throughout e-commerce supply chain thus reducing damage and loss



Reduces volume and weight of packaging waste in need of end-of-life management

Improves transportation and storage efficiency



Extends shelf-life of food thus reducing food waste



Sustainability Case Studies



STREAMLINED LIFE CYCLE ASSESSMENT E-COMMERCE MAILER PACKAGING CASE STUDY

MAILER PACKAGE COMPARISON

Mailers are used to transport items to consumers' doors. There are a number of other options for mailers to consider. The most common mailer is a cardboard mailer. We will compare three mailer options: a cardboard mailer, a paper mailer, and a recycled mailer. Each mailer is compared to a standard cardboard mailer. The results are shown in the table below.

MAILER TYPE	PERFORMANCE METRIC
STANDARD MAILER	1.00x
PAPER MAILER	1.40x
RECYCLED MAILER	5.40x

FOSSIL FUEL CONSUMPTION

Higher fossil fuel consumption is a negative environmental impact. The table below shows the fossil fuel consumption for each mailer type. The results are shown in the table below.

MAILER TYPE	FOSSIL FUEL CONSUMPTION
STANDARD MAILER	1.40x
PAPER MAILER	5.40x

GREENHOUSE GAS EMISSIONS

Higher greenhouse gas emissions are a negative environmental impact. The table below shows the greenhouse gas emissions for each mailer type. The results are shown in the table below.

MAILER TYPE	GREENHOUSE GAS EMISSIONS
STANDARD MAILER	14.8%
PAPER MAILER	22.0%
RECYCLED MAILER	56.7%

WATER CONSUMPTION

Higher water consumption is a negative environmental impact. The table below shows the water consumption for each mailer type. The results are shown in the table below.

MAILER TYPE	WATER CONSUMPTION
STANDARD MAILER	1x
PAPER MAILER	1.7x
RECYCLED MAILER	5.8x

END OF USE SUMMARY

Source reduction benefits: 86.2% Net weight, 77.1% Total mass, 43.3% Fuel use, 41.8% Total CO₂e.

Recovery benefits: 14.8% Net weight, 22.0% Total mass, 56.7% Fuel use, 58.2% Total CO₂e.

IMPLICATIONS

Mailers are a key component of the e-commerce supply chain. The table below shows the implications of using different mailer types. The results are shown in the table below.

MAILER TYPE	PERFORMANCE METRIC
STANDARD MAILER	1.00x
PAPER MAILER	1.40x
RECYCLED MAILER	5.40x

E-Commerce

LIFE CYCLE ASSESSMENT MOTOR OIL PACKAGING CASE STUDY

MOTOR OIL PACKAGE COMPARISON

Motor oil is a key component of many vehicles. The table below shows the performance of different motor oil packaging options. The results are shown in the table below.

PACKAGE TYPE	PERFORMANCE METRIC
STANDARD PACKAGE	1.00x
RECYCLED PACKAGE	1.40x

WATER CONSUMPTION

Higher water consumption is a negative environmental impact. The table below shows the water consumption for each package type. The results are shown in the table below.

PACKAGE TYPE	WATER CONSUMPTION
STANDARD PACKAGE	19.2
RECYCLED PACKAGE	56.4

GREENHOUSE GAS EMISSIONS

Higher greenhouse gas emissions are a negative environmental impact. The table below shows the greenhouse gas emissions for each package type. The results are shown in the table below.

PACKAGE TYPE	GREENHOUSE GAS EMISSIONS
STANDARD PACKAGE	14.12
RECYCLED PACKAGE	38.58

FOSSIL FUEL CONSUMPTION

Higher fossil fuel consumption is a negative environmental impact. The table below shows the fossil fuel consumption for each package type. The results are shown in the table below.

PACKAGE TYPE	FOSSIL FUEL CONSUMPTION
STANDARD PACKAGE	111
RECYCLED PACKAGE	36,809

END OF USE SUMMARY

Source reduction benefits: 97.4% Net weight, 2.6% Total mass.

Recovery benefits: 1x Net weight, 2x Total mass.

IMPLICATIONS

Motor oil packaging is a key component of the automotive supply chain. The table below shows the implications of using different packaging options. The results are shown in the table below.

PACKAGE TYPE	PERFORMANCE METRIC
STANDARD PACKAGE	1.00x
RECYCLED PACKAGE	1.40x

Product

LIFE CYCLE ASSESSMENT COFFEE PACKAGING CASE STUDY

COFFEE PACKAGE COMPARISON

Coffee is a popular beverage. The table below shows the performance of different coffee packaging options. The results are shown in the table below.

PACKAGE TYPE	PERFORMANCE METRIC
STANDARD PACKAGE	1.00x
RECYCLED PACKAGE	1.40x

WATER CONSUMPTION

Higher water consumption is a negative environmental impact. The table below shows the water consumption for each package type. The results are shown in the table below.

PACKAGE TYPE	WATER CONSUMPTION
STANDARD PACKAGE	13.7
RECYCLED PACKAGE	63.7

GREENHOUSE GAS EMISSIONS

Higher greenhouse gas emissions are a negative environmental impact. The table below shows the greenhouse gas emissions for each package type. The results are shown in the table below.

PACKAGE TYPE	GREENHOUSE GAS EMISSIONS
STANDARD PACKAGE	6,654
RECYCLED PACKAGE	41,130

FOSSIL FUEL CONSUMPTION

Higher fossil fuel consumption is a negative environmental impact. The table below shows the fossil fuel consumption for each package type. The results are shown in the table below.

PACKAGE TYPE	FOSSIL FUEL CONSUMPTION
STANDARD PACKAGE	111
RECYCLED PACKAGE	36,809

END OF USE SUMMARY

Source reduction benefits: 83% Net weight, 17% Total mass.

Recovery benefits: 67% Net weight, 33% Total mass.

IMPLICATIONS

Coffee packaging is a key component of the food and beverage supply chain. The table below shows the implications of using different packaging options. The results are shown in the table below.

PACKAGE TYPE	PERFORMANCE METRIC
STANDARD PACKAGE	1.00x
RECYCLED PACKAGE	1.40x

Food

Promotion

FlexPack VOICE®
Perfect Packaging
SPMC
Social Media



Join the Conversations

• Join us on Social Media

- FPA
- Perfect Packaging
- ELC
- SPMC



theperfectpackaging · Follow

theperfectpackaging 11h
It's fall baking time! Make it sustainable with ingredients in flexible packaging!

Posted @theperfectpackaging · @strawberies are "Maple Marshmallow Popcorn Bars," feat. #TradeJobs Mini Maple Flavored Marshmallows - Tap the link in our bio to get this easy #TJRecipe!

True to their moniker, these 'mallows are both maple-flavored (courtesy of maple syrup & natural flavors) and miniature in size. And like the other magnificent #marshmallows we offer throughout the year, they're vegan, gluten free, and kosher.

Use them in a batch of crisp rice treats or popcorn bars (pictured). float them

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FPA @FPA_PackDIE

These manufacturers are stopping consumers in their tracks with powerful designs. <https://perfectpackaging.com/gallery/#?gid...>

perfect kibble

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Want to dive deeper into the benefits of flexible packaging? Check out our resources.

PERFECTPACKAGING.ORG

Resources - Perfect Packaging - Flexible Packaging

Resources GENERAL <https://youtu.be/Cm9hgRWolec?si=5XyCKym7PWmQR1ONFPA> 2023 Flexible Packaging Achievement Awards Competition

The Future is Flexible!

- Industry continues to grow despite packaging and plastic backlash
- FPA assists with information, protection, connection, and promotion
- Labor, supply chain, and sustainability remain the top issues
- Need to continue to work on closing the circularity loop while protecting our products by emphasizing their benefits
- Supply chain collaboration is key



Packaging Second only to Nature's Original