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WASTE & OPPORTUNITY 2020

SEARCHING FOR CORPORATE LEADERSHIP

50 CORPORATIONS RANKED ON PLASTIC PACKAGING POLLUTION

AS YOU SOW®

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About *As You Sow*

As You Sow is a nonprofit organization dedicated to increasing environmental and social corporate responsibility. Founded in 1992, *As You Sow* envisions a safe, just, and sustainable world in which environmental health and human rights are central to corporate decision making. Its Energy, Environmental Health, Waste, and Human Rights programs create positive, industry-wide change through corporate dialogue, shareholder advocacy, coalition building, and innovative legal strategies. For more information, visit www.asyousow.org.

Note to the Reader

This data was company-reported to *As You Sow* directly or collected from publicly available documents and is not exhaustive. Please contact individual companies with questions regarding the corporate data presented in this report. If you are a company representative and believe there has been an error in the data collected and ranked, or would like to submit updates of new information, please contact us at sustainablepackaging@asyousow.org, so we can update our information.

TOP COVER PHOTO: Algalita Marine Research and Education

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EXECUTIVE SUMMARY

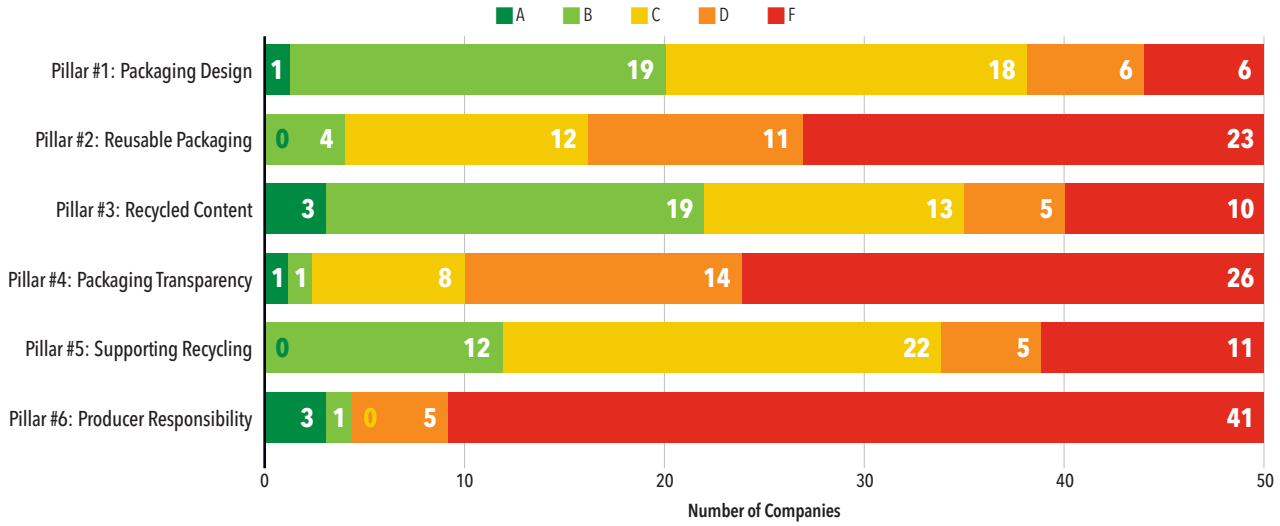
Plastic pollution is a global crisis that is actively threatening oceans, wildlife, and public health. Plastic pollution has rapidly elevated to crisis level in the past three years as better data on the scope of the problem has become available. Single-use packaging has grown to be a major component of the four million to 12 million tons of plastic trash that escapes capture and is swept into waterways annually. To address these pollution concerns, as well as reduce the use of extractive resources, companies must prioritize a shift away from wasteful single-use packaging and move toward circular models that prioritize significant, absolute reductions in overall use of plastic, as well as promote reusability, recyclability, or compostability in their packaging.

This study measures the progress of 50 large companies in the beverage, quick-service restaurant, consumer packaged goods, and retail sectors on six core pillars where swift action is needed to reduce plastic pollution: 1) Packaging Design, 2) Reusable Packaging, 3) Recycled Content, 4) Packaging Data Transparency, 5) Support for Recycling, and 6) Producer Responsibility. The report provides letter grades on the 50 companies, based on their quantitative performance on these six core pillars. The grades inform stakeholders and investors about which companies are leading and lagging in creating sustainable packaging. Also, the report's criteria provide tangible metrics to help companies continue to improve their packaging management strategies as they enter the new decade.

Companies must prioritize a shift away from wasteful single-use packaging and move toward circular models.

Company progress was most evident in pledges to redesign packaging to be reusable, recyclable, or compostable, followed by commitments to recycled content and actions to support recycling. More companies demonstrated leadership in these categories and received A or B grades. There was notably less leadership in the areas of reusable packaging innovation, data transparency, and producer responsibility as shown in Figure 1 (see Appendix A for individual company grades listed by pillar). These results indicate that companies have a long way to go to demonstrate leadership in all six core pillars.

FIGURE 1: Number of Companies Receiving the Grade



AS YOU SOW

As You Sow surveyed and ranked 50 companies and found that most companies are failing to take basic actions needed to reduce plastic pollution

PLASTIC PACKAGING IS HARMING PEOPLE & PLANET
ACTION NEEDS TO BE TAKEN TO REDUCE, REUSE, & RECYCLE

THE SIX PILLARS OF SUSTAINABLE PLASTIC PACKAGING

1: PACKAGING DESIGN

Prioritize sustainable delivery systems, alternatives to plastic packaging, and designing packaging to be reusable, recyclable, and compostable. Packaging must be compatible with collection and recycling systems.

2: REUSABLE PACKAGING

Prioritize reusable or refillable packaging systems and low to zero-waste models for single use packaging.

3: RECYCLED CONTENT

Establish programs and commitments to increase the use of recycled content in plastic packaging.

4: PACKAGING TRANSPARENCY

Disclose key metrics: weight and units of all packaging and all plastic packaging generated; use of recycled content.

5: SUPPORTING RECYCLING

Support research and funding for fixing recycling infrastructure. Work towards reducing packaging impacts within the broader systems of collection and processing.

6. PRODUCER RESPONSIBILITY

Support deposit and producer responsibility programs to dramatically increase recycling rates and provide adequate feedstock for recycled content goals.

ONLY 7% OF FUNDING NEEDED SECURED

$12 BILLION FUNDING NEEDED TO FIX RECYCLING

100%

SPOTLIGHT

U.S. curbside recycling is capturing just **32%** of recyclable materials. Only **7%** of funding needed to fix recycling has been raised. Companies need to take financial responsibility to ensure their packaging is recyclable and recycled. A severe shortage of materials needed for recycled plastic content and lack of progress on making flexible packaging recyclable suggests many companies may not meet recycled content goals and recyclability pledges under the New Plastics Economy Global Commitment.

AS YOU SOW | **PACKAGING SUSTAINABILITY SURVEY SUMMARY**

SURVEY SUMMARY

A few companies made notable commitments and supported promising startups...
Far more companies must become engaged and commitments must be more ambitious

POSITIVE ACTIONS

NEARLY HALF OF COMPANIES PLEDGE TO MAKE ALL PACKAGING RECYCLABLE BY 2025:
19 out of 50 companies made this pledge, which is a needed first step to reduce packaging pollution.

Loop
Algramo

PROMISING REUSABLE MODELS:
Programs run by startup companies like Loop and Algramo suggest reusable packaging models are gaining traction and can be scaled up.

Unilever

UNILEVER SETS PLASTIC PACKAGING REDUCTION GOALS: It pledged to reduce plastic packaging by 100,000 tons and use 25% recycled plastic content by 2025 – the first major consumer goods company to promise an absolute cut.

COMPANIES DISCLOSING UNIT SALES:
An important benchmark to determine actual cuts in plastic use is units generated. Wendy's, Coca-Cola, and Colgate-Palmolive are now disclosing unit sales.

IMPROVEMENTS NEEDED

LITTLE PROGRESS ON RECYCLING FLEXIBLE PRODUCTS: Companies lag badly in finding cost effective, scalable recycling options for pouch and sachet packaging, which has flooded global markets, and ends up by the billions in oceans and on beaches.

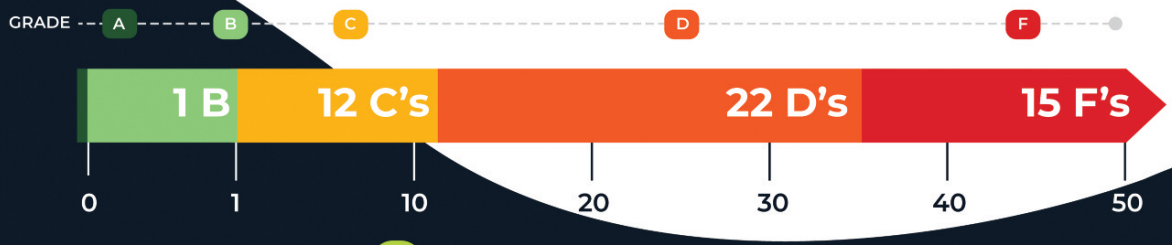
AMBITIOUS REUSABLE PACKAGING COMMITMENTS ARE RARE:
Companies are not switching to reusables fast enough. Only 2 companies, Nestle Waters NA, and Coca-Cola, generate at least 15% of revenue from reusables.

RECYCLED CONTENT USE LOW:
Companies do not have high levels of recycled content in use, and there is not enough supply of post-consumer materials to meet current 2025 corporate recycled content commitments.

LACKING PRODUCER RESPONSIBILITY:
U.S. curbside recycling systems are doing poorly, and most companies have failed to agree to needed solutions such as deposit and producer responsibility laws.

SUMMARY

No companies received an A. Only one company received a B level grade, Unilever, which received a B-. All other companies received C, D, and F's for their average all across 6 pillars.



50 COMPANIES WERE SURVEYED

Key Findings

Promising reuse models identified. Circular shopping platforms, Loop and Algramo, two of several reuse models under development, offer hope for scalable delivery of a variety of products in reusable packaging, both in stores and via home delivery. Unilever sells shampoo bars and toothpaste tablets that reduce or replace packaging. Coca-Cola Co. plans to ramp up refillable bottles to 50% of sales in Brazil by 2030. To speedily reduce packaging and plastic waste, far more companies need to set ambitious goals to develop reusable packaging and new low- to zero-waste product delivery methods.

Ambitious reusable packaging commitments are rare. Most companies are lagging in establishing reusable packaging models and are not moving swiftly enough to replace single-use packaging. Only two of the 50 companies analyzed—Nestlé Waters NA and Coca-Cola Co.—reported that they generate at least 15% of revenue from reusable packaging products. However, this mostly reflects ongoing and historical operations, not necessarily replacement of single-use units of packaging with new reusable models. Only two of the companies analyzed—Anheuser-Busch InBev and Starbucks —have set specific goals to increase company-wide reusable packaging delivery methods.

Nearly half the companies surveyed have pledged to improve packaging design. Twenty-one of the 50 companies researched have pledged that all their packaging will be reusable, recyclable, or compostable, with 19 pledging to do it by 2025. This is an encouraging first step, but far more companies must also undertake equally ambitious commitments to reduce the total amount of plastic used, reduce the amount of virgin plastic used, and dramatically increase use of recycled content. Further, these pledges need to be paired with financial support for more efficient recycling systems, enhanced recycling processing infrastructure, and sustained market demand to effectively recycle plastic.

Corporate commitments and initiatives are too new to determine if company actions are the real deal. More than 200 companies have committed to reduce plastic pollution under the New Plastics Economy Global Commitment. However, this and related initiatives are not sufficiently advanced to determine whether companies are genuinely committed to systemic change and to execute on their goals. Caution and healthy skepticism are in order as there is a history of backsliding and failed promises around reusables, packaging recycling, and recycled content.

Meeting recycled content goals will be a challenge. Many companies have set ambitious goals to increase recycled plastic content, but recyclers say there is nowhere near enough supply of collected plastic to meet the demand. To meet the goals, many of which are for 2025, the U.S. recycling rate, which has barely budged over the last decade, would need to more than double in a very short time frame. This would be an unprecedented effort to achieve and represents a core challenge to companies.

Some companies are beginning to disclose unit sales. For stakeholders to fully understand success in meeting recycled content and reduction goals, companies need to supplement weight or volume information with disclosures of how many individual units of plastic packaging and overall packaging they place into commerce annually to provide a benchmark to more accurately measure real future reductions in plastic use. Only three of the 50 companies surveyed—Coca-Cola Co., Colgate-Palmolive Company, and Wendy's—reported unit sales.

Little progress on making flexible plastic packaging recyclable. One of the biggest dilemmas for meeting companies' recyclability goals is the widespread and growing use of non-recyclable flexible plastic packaging, including sachets, pouches, and films. There is little evidence of the swift movement needed to make this material recyclable in practice by the 2025 goal set by scores of companies. Some brands are touting chemical recycling as a solution, a range of technologies that can restore or recycle degraded and low-value plastic, but several of

the technologies have concerns, and most are a decade away from being available at scale. Companies do not have the luxury of 10 years to ramp up new recycling solutions given the substantial ongoing impact of these materials on the environment. To meet the 2025 deadline, companies may need to move away from flexible packaging to materials that can be processed by the current mechanical recycling system.

Strapped recycling system needs massive infusion of producer funding. The U.S. curbside recycling system is performing poorly, capturing just 32% of recyclable materials available for processing from U.S. homes. The system needs an estimated $12 billion in new investment to perform properly, but cities cannot afford to finance it, and only about $870 million—about 7%—appears to have been invested to date. Companies should be investing up to 1% of their annual revenue toward capturing the products they put on the market. Only four companies—Nestlé Waters NA, Campbell Soup Company, Colgate-Palmolive Company, and Target Corporation—disclosed a percentage of annual revenue contributed toward recycling infrastructure, and none were close to 1%.

Very few companies endorse producer responsibility. Companies placing packaging on the market must step up and take responsibility to finance creative solutions to fix U.S. recycling systems. The fairest way is through producer responsibility programs, but companies are lagging badly on accepting such responsibility. In this study, the highest number of companies received failing scores in the Producer Responsibility pillar. Only four companies—Coca-Cola Co., Nestlé and its Nestlé Waters NA subsidiary, and Unilever—endorsed some form of producer responsibility, but endorsement does not necessarily imply proactive support for legislative action.

Break Free From Plastic activists conducting brand packaging audit, Kerala, India.
(Photo courtesy Stiv Wilson, Peak Plastic Foundation)

Companies identified by activists as top polluters are most visibly active in starting to address their plastic pollution problem. Coca-Cola Co., Colgate-Palmolive Company, Nestlé, PepsiCo, and Unilever were named among the top 10 polluters based on packaging collected by Break Free From Plastic activists in more than 400 brand audits in 50 countries in 2019. These companies were also among the highest scorers on our packaging sustainability scorecard. Brands are feeling the pressure on their reputation and taking significant action to fund policies and programs that have the potential to deal with problematic packaging and reduce plastic pollution. There is far less evidence of commitment and action by less prominent companies.

Longtime deposit foe Coca-Cola Co. may have reversed course. Coca-Cola Co., which has strongly opposed container deposit laws for decades, now reports a changed position from complete opposition to support such systems when managed by producers or a consortium of stakeholders.

Big Companies, Low Grades

All the companies surveyed have significant work to do to achieve the metrics presented in the six pillars that form the basis for this report. However, we identified six laggards that are far behind some peers and, given their size, should be investing far greater resources on plastic packaging reduction, packaging redesign, commitments to recycled content, and support for recycling. The six largest companies surveyed based on revenue that received either a D or an F are Walmart Inc., Kroger Co., PepsiCo, Tyson Foods, Inc., Kraft Heinz Co., and Mondelēz International. For more details, see Figure 19 in Conclusion.

FIGURE 2: Grade Summary

COMPANY	OVERALL GRADE
Unilever PLC	B-
Nestlé Waters NA	C+
Nestlé	C+
Colgate-Palmolive Co.	C+
Coca-Cola Co.	C+
Procter & Gamble	C
Diageo PLC	C
Keurig Dr Pepper	C
Johnson & Johnson	C-
McDonalds	C-
Clorox Co.	C-
Starbucks	C-
Anheuser-Busch InBev	C-
Target Corp.	D+
Kellogg Co.	D+
PepsiCo	D+
Walmart Inc.	D+
Campbell Soup Co.	D+
Kimberly-Clark Co.	D+
Wendy's	D+
General Mills	D
Tim Hortons	D
Heineken Co.	D
Kroger Co.	D
Dunkin' Brands	D

COMPANY	OVERALL GRADE
Mondelēz International	D
Burger King	D
KFC	D
Molson Coors Beverage Co.	D
Monster Beverage Corp.	D
Costco	D-
Chipotle Mexican Grill, Inc.	D-
Kraft Heinz Co.	D-
Pizza Hut	D-
Taco Bell	D-
Dean Foods	F
Hershey's Co.	F
Conagra Brands Inc.	F
Whole Foods Market	F
Pilgrim's Pride Corp.	F
Hormel Foods	F
Papa John's	F
Smithfield Foods, Inc.	F
Tyson Foods, Inc.	F
J.M. Smucker Co.	F
Boston Beer Co.	F
United Natural Foods	F
Domino's Pizza Inc.	F
Jack in the Box	F
National Beverage	F

INTRODUCTION

In 2006, *As You Sow* published its first report analyzing packaging sustainability in the beverage industry, with follow up reports in 2008 and 2011. In 2015, we expanded the report to analyzing the packaging practices of 47 U.S. quick-service restaurants, beverage companies, and consumer packaged goods companies. At that time, our findings indicated that not a single company had earned a "Best Practice" status by sufficiently prioritizing packaging source reduction, recyclability, compostability, recycled content, or recycling policies.[1]

Our primary focus in 2015 was prioritizing corporate actions that would boost lagging U.S. recycling rates for a variety of packaging types including glass, aluminum, paper, and plastic. Times have changed! The twin hammers of China's National Sword policy banning waste imports and a steady stream of new data on the pervasiveness of plastic pollution demands a greatly expanded response. About one-third of the 400 million tons of plastics produced annually becomes packaging, and more than half of all consumer packaging is plastic.

U.S. plastic recycling rates have barely budged in the last five years, despite some laudable efforts to move them upward by groups like The Recycling Partnership. As a result, the primary focus for this study is on plastic packaging. We examine several simultaneous strategies companies can take to bring plastic pollution under control. Such strategies include actions to reduce overall use of single-use plastic, expand use of reusable and refillable alternatives, increase use of recycled content, and develop producer responsibility policies to finance collection and recycling improvements.

The China waste ban, in particular, has exposed the underlying weakness of domestic processing markets for post-consumer plastics. The ban highlighted the lack of adequate recycling infrastructure in many areas across the U.S., leading to a crisis in recycling in some areas because of recyclable materials being burned or landfilled.

The pervasiveness of plastic particles in our food, drinking water, and the far reaches of ocean trenches and mountaintops provides stark evidence that we are currently unable to adequately control the immense flow of plastics into our world.[2,3] While strong domestic demand exists for some kinds of plastic like PET (#1) and HDPE (#2), those markets still cannot obtain adequate supply due to infrastructure problems. For many other types of plastic, there is no viable market.

A compounding factor is the vast and growing supply of virgin plastics that compete with recycled materials. As use of oil and natural gas for combustion engines shrinks, many huge petrochemical stakeholders are moving their supply into plastics production. The American Chemistry Council projects that, by 2023, the chemical industry will spend $164 billion on 264 new facilities or expansion projects in the U.S., many focused on plastics production.[4] These new projects will add price pressures to the processors of post-consumer plastics seeking to provide a greatly increased supply of recycled content plastics to producers.

Here are some of the most crucial factors driving concerns about growing plastic pollution:

- Plastic production is set to quadruple by 2050, yet only 14% of plastic packaging is recycled globally, and just 13% is recycled in the U.S.
- The vast majority (72%) of plastic packaging is not recovered: 40% is landfilled, and a massive 32% leaks out of the collection system by being either illegally dumped or mismanaged, feeding the ocean plastics problem.[5]
- A million plastic bottles are purchased globally every minute,[6] and only about 6% are estimated to be recycled.[7] Plastic bottles are the third most common item found in ocean debris.
- One recent study attributes a range of human health harms to plastic waste, estimating that from 400,000 to one million people die annually from diseases and illnesses caused by plastic pollution, including uncollected rubbish dumped or burned near homes.[8]
- Oceans contain far more broken up plastic than previously believed—with an estimated 155 million tons of plastic by 2025 and 4.8 million to 12.7 million tons added annually, equivalent to a garbage truck load every minute.[9]

- Oceans will contain more plastic than fish by 2050 if no actions are taken to reduce the flow of plastics into waterways.[10]
- Carbon pollution coming from plastics. Global growth projections for plastic production and use show that, by 2050, greenhouse gas emissions from plastic could reach 56 gigatons, or up to 13% of Earth's entire remaining carbon budget.[11]
- Plastic pollution now concerns Americans as much as or more so than climate change, according to one recent poll.[12]

ALARMING NEW DATA ON HUMAN HEALTH IMPACTS

For many years, plastic pollution got scant attention because it was viewed as a solid waste issue without significant human health impact. More recently, the growing impact on wildlife has become a concern. "Plastic waste kills up to 1 million sea birds, 100,000 sea mammals, marine turtles and countless fish each year."[13] In 2019, a report from UK charity Tearfund suggested that plastic and other mismanaged waste is also exacting a significant human toll. Tearfund estimated that each year between 400,000 and one million people die in Global South from illnesses and diseases like diarrhea, malaria, and cancers caused by living near uncollected waste and plastic pollution.[14] Single-use plastics are placed into commerce in areas with little to no ability to contain them. One in four people globally lacks access to properly regulated solid waste collection. Without rubbish collection or disposal, let alone recycling, many have no option but to burn or dump their waste. In the poorest countries, 93% of waste is burned or discarded in roads, open land, or waterways. When burned, plastics can release pollutants that increase the risk of heart disease, cancer, respiratory ailments, and skin and eye diseases, the Tearfund report said.

Community waste burns in Gresik, Indonesia. Burning plastic is sometimes the only disposal option available.

(Photo courtesy Stiv Wilson, Peak Plastic Foundation)

THE PLASTICS–CLIMATE CONNECTION

Plastic is often touted by its producers and brand users as having a smaller manufacturing carbon impact than competitor packaging materials, such as aluminum or paper, but such assertions rarely consider the full range of plastic's life cycle impacts, some of which are just starting to be studied. Plastic originates as fossil fuel and can often continue to emit greenhouse gases during its entire lifecycle.

A recent report estimated that oil, gas, and fracking operations intended for plastics feedstock emit 12 to 13 million metric tons of carbon dioxide per year. Annual emissions from manufacturing ethylene, one building block for polyethylene plastic, are estimated at 184 to 213 million metric tons of carbon dioxide, equivalent to the emissions of 45 million passenger vehicles. Incineration of plastics adds another 5.9 million metric tons of carbon dioxide annually. By 2050, the greenhouse gas emissions from plastic production could reach over 56 gigatons, or between 10% and 13% of the entire remaining carbon budget. Greenhouse gas emissions from plastic production threaten the ability of the global community to keep global temperature rise below 1.5°C, according to a study by the Center for International Environmental Law.[15] Some of these emissions will come from the estimated $164 billion in planned investment noted above in more than 200 new plastic production facilities

planned by the petrochemical industry by 2023.[16] Further, traditional estimates of carbon generation do not include recent research findings that discarded plastics can actually emit carbon when exposed to sunlight.[17]

As more work is done to calculate the rate at which plastics emit carbon, the carbon footprint of plastic seems likely to increase. Companies must work to simultaneously resolve issues of carbon and plastics impacts through creative new circular economy oriented solutions.

OVERALL PLASTIC REDUCTION MUST BE A PRIORITY

Plastic pollution is out of control, and we must find ways to substantially slow its encroachment into earth's ecosystems. The focus must be on absolute reductions in the number of single-use plastics manufactured and put into commerce (phasing it out altogether where possible), smarter packaging design choices emphasizing reuse and refill options, and vast, unprecedented increases in plastics recycling. Expanding the definition of reduction is one key step. Some companies interpret plastic reduction to mean light weighting packaging materials but do not focus on reducing the number of units placed on the market. A lighter plastic bottle or wrapper still becomes harmful plastic pollution if it escapes containment. In addition, light weighting can be detrimental to recycling processes and economics, so it must be carefully considered as a strategy and supplemented with a focus on reduction of packaging units generated. The definition of plastic reduction needs to expand to include absolute reduction by measuring weight or volume, as well as the actual number of units of plastic placed into commerce. This is one of several new metrics proposed in this report to measure and incentivize progress in reducing plastic pollution.

NEW PLASTICS ECONOMY GLOBAL COMMITMENT

An important initiative already pushing more than 200 companies toward goals aligned with the six pillars of our assessment methodology is the New Plastics Economy Global Commitment led by the Ellen MacArthur Foundation in collaboration with the UN Environment Programme. Launched in 2018, the Global Commitment seeks to eradicate plastic waste by (a) eliminating problematic plastic packaging from commerce; (b) ensuring that the remaining plastic deemed necessary can be safely reused, recycled, or composted; and (c) dramatically increasing the amount of plastic reused or recycled.

The Global Commitment supports the vision of a circular economy for plastic, where it never becomes waste. The commitment has been endorsed by more than 400 stakeholders, including companies, governments, universities, and NGOs. At the heart of the commitment is a pledge by 66 packaged goods companies, 51 packaging producers, and 29 retail and hospitality companies to meet a bold set of targets by 2025. These targets include eliminating several types of problematic or unnecessary plastic packaging; making all packaging reusable, recyclable, or compostable; moving from single-use packaging toward reuse models where practicable; and setting ambitious recycled content targets across all plastics used.

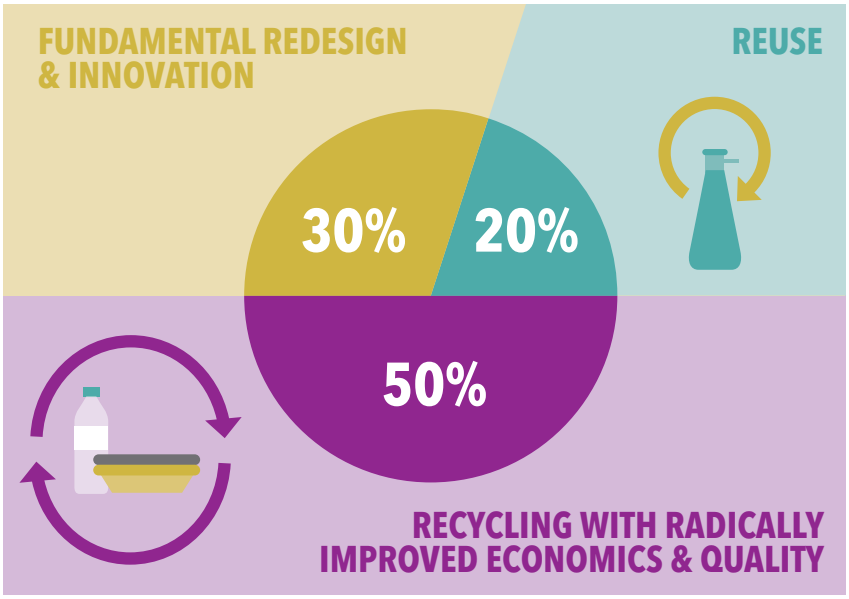
Figure 3 summarizes New Plastics Economy research, which concludes that plastic waste can be greatly reduced or eradicated through three key strategies: (1) 20% of plastic packaging can be profitably converted to reusable alternatives; (2) 50% of plastic packaging can be profitably recycled with design and recycling systems upgrades; and (3) the remaining 30% will never be recycled and needs fundamental redesign using innovation in materials design and processing technologies.[18]

Global Commitment signatories include six of the top 10 global fast-moving consumer goods companies: Nestlé, PepsiCo, Unilever, Mars Incorporated, Coca-Cola Co., and L'Oréal. Together, business signatories account for more than 20% of all plastic packaging produced globally and collective revenues in excess of $2 trillion. Business signatories are required to report annually on progress made toward each goal.[19]

One strong requirement of the Global Commitment is that, to be deemed recyclable, companies using a specific kind of packaging must be able to demonstrate it is actually being recycled "in practice and at scale" within an

existing recycling system that covers significant and relevant geographical areas as measured by population size.[20] For some plastics, such as flexible pouches and sachets, this will be a challenging goal to attain. Another strength of the commitment is that incineration, waste-to-energy, and plastics-to-fuel operations companies may engage in cannot be considered recycling or part of a circular economy, thwarting potential efforts to avoid genuine recycling solutions. However, the commitment neither promotes nor requires any form of producer responsibility to finance badly needed efforts to radically increase packaging recycling. This allows companies to continue to do nothing or make largely symbolic contributions to groups doing the heavy lifting on recycling, while not providing a long-term, reliable stream of needed income.

FIGURE 3: Three Strategies to Transform the Global Plastic Packaging Market



World Economics Forum and Ellen MacArthur Foundation
The New Plastics Economy – Catalysing action
(2017, www.newplasticseconomy.org)

While the work of the New Plastics Economy Global Commitment is an encouraging start, it is important to emphasize that the solution to plastic waste is not at hand or anywhere close to it. There is much uncertainty and hard work still ahead. Companies often sign up for bold commitments only to fail to achieve them. PepsiCo and Nestlé Waters NA both made bold commitments to *As You Sow* to double container recycling over an eight to 10 year period, and neither company came close to achieving those goals.[21] While a third of relevant Global Commitment signatories have active reuse pilots, less than 3% of signatories' packaging is reusable today. An enormous amount of system-based work needs to be done to provide sufficient feedstock to meet the recycled content commitments of signatories. It will take unrelenting pressure from stakeholder groups and unprecedented focus on the part of corporate managers to meet the Global Commitment 2025 goals.

GROWING INVESTOR SCRUTINY

An increasing number of mainstream investors are paying attention to the global plastics crisis with detailed research reports for clients describing the global plastics crisis and the need for less plastic and circular economy oriented solutions. The number of investor earnings calls in 2018 that mentioned "plastic waste" increased by 340% compared to 2017.[22] Addressing the China import ban, a Citigroup Inc. report concluded that the plastics ban "is here to stay and in our view the dramatic impacts we've seen on U.S. and European plastics producers are just the beginning."[23] A Morgan Stanley report said, "we expect a growing focus on finding alternatives for petrochemical based plastics, and a reduction in the amount of single use plastic use." Morgan Stanley has also committed to use its capital market leverage to prevent, reduce, and remove 50 million metric tons of plastic waste from the environment by 2030.[24]

OUR METHODOLOGY

The focus of our updated assessment methodology includes the following six pillars:

- Packaging Design
- Reusable/Low-to Zero-Waste Packaging
- Recycled Content
- Packaging Data Transparency
- Support for Recycling
- Producer Responsibility

This grading system rewards companies that prioritize design for reuse, recycling, and compostability and alternatives to plastic packaging; utilize the highest feasible amount of recycled content; reduce overall use of plastic by placing fewer units of single-use plastics into commerce; and disclose packaging use; accept producer responsibility policy measures to greatly improve recycling rates; and support strengthening recycling by actions such as assisting in the development of more domestic processing markets. Many companies have just started down this path, resulting in low scores for this assessment. We anticipate that scores will improve over time as companies increase activities to reduce plastic waste and dramatically increase recycling.

As You Sow Survey

As You Sow surveyed 50 of the United States' largest publicly traded quick-service restaurants, beverage companies, consumer packaged goods (CPG) companies, and retailers with their own CPG brand(s) about their national and international packaging, where relevant.[25] Twenty-five members of the Plastic Solutions Investor Alliance, a group of global investors with combined assets of $2 trillion convened by *As You Sow*, who are engaging companies on plastic pollution, signed a letter asking the companies to complete the survey. Roughly half of the companies responded to *As You Sow's* survey request. Publicly available information on each company's plastic use, packaging practices, and packaging sustainability initiatives was then collected and reviewed along with survey responses to grade company progress toward packaging sustainability.

Packaging Sustainability Rankings

The packaging sustainability rankings are indicated by a letter grade scale (A to F) across six pillars of evaluation: 1) Packaging Design; 2) Reusable Packaging; 3) Recycled Content; 4) Packaging Data Transparency; 5) Supporting Recycling; and 6) Producer Responsibility.

A total of 35 key performance metrics were reviewed to establish grades for each company; the metrics are summarized in Appendix B. These metrics include goals or programs that demonstrate leadership in use of reusables, refillables, and other forms of low-waste product delivery; commitments to use recycled content; and other actions to reduce plastic pollution. Each metric was given a yes or no answer based on company surveys and publicly available information, including corporate responsibility reports. These scores were used to determine a letter grade for each of the six pillars, providing insights on which companies are leading and lagging on plastic packaging sustainability. An additional penalty metric was applied if a company failed to meet a stated recycling or reduction goal within the last five years.

The following chapters summarize the results of our sustainable packaging research and rankings by each pillar topic. For each pillar, examples of leadership actions are included to share industry best practices, as well as remaining challenges and recommended actions to improve packaging sustainability.

1 PACKAGING DESIGN

The metrics for evaluating company performance on Pillar 1, Packaging Design, are:

- Goal to make company-wide reductions in plastic packaging or all packaging materials
- Goal to reduce company-wide virgin plastic use in packaging
- Goal to design packaging to be 100% recyclable, compostable, or reusable
- Actions to reduce packaging materials or increase packaging recyclability
- Broad statement to reduce packaging waste or increase packaging recyclability

Packaging Design Overview

Getting the plastic pollution crisis under control starts with good packaging design. In recent years, companies have been urged by stakeholders to redesign packaging to be reusable, recyclable, or compostable. That remains an important stakeholder priority although, as noted below, opportunities for circular composting systems are severely limited. Many kinds of packaging, especially plastic packaging, were not designed to be recycled but instead to be used once and then discarded. Global flexible plastic packaging, including pouches, sachets, and films, generated a whopping $252 billion market in 2017.[26] Flexible packaging is the fastest growing packaging segment and is used by 83% of major brands, but flexible pouches cannot be recycled. Materials that are "designed for the dump" reinforce a message to consumers that it is okay to continue to purchase and discard materials that could have been made to be recycled.

In addition to the importance of making packaging recyclable, rising public awareness and concern about the scale of plastic that escapes into the environment (up to 12 million tons annually) has added a level of urgency that merits prioritizing absolute reductions in the use of single-use packaging, whenever possible.

There are many ways to address packaging design. In some cases, single-use packaging can be eliminated by redesigning delivery methods to avoid packaging altogether. Where some packaging is required, refillable and reusable container options should be prioritized. For some beverages and cleaning products containing mostly water, the core substance can be concentrated, reducing the amount of packaging needed.

TOP PERFORMERS

Unilever secured one of the top scores in this area for its commitment to make absolute reductions in total plastic use. Nestlé published a list of plastics it will phase out because they are unlikely to be recycled. Starbucks and McDonald's created a $10 million NextGen cup challenge and are working with competitors to redesign fiber-based coffee cups to make them more recyclable and compostable. The Clorox Company committed to double post-consumer recycled content in packaging and to cut the use of virgin materials in packaging by half.

Leadership Actions

UNILEVER ABSOLUTE 100,000-TON REDUCTION GOAL BY 2025

Unilever has taken the most significant action by a major company to date in plastics reduction by agreeing to cut absolute plastic packaging use by 100,000 tons and to use 25% recycled plastic in all packaging by 2025. "Our

starting point has to be design, reducing the amount of plastic we use, and then making sure that what we do use increasingly comes from recycled sources," said Unilever CEO Alan Juppe, adding that "this demands a fundamental rethink in our approach to our packaging and products. It requires us to introduce new and innovative packaging materials and scale up new business models, like re-use and re-fill formats, at an unprecedented speed and intensity."[27]

Examples of how the company will reduce use of plastic include selling toothpaste that comes in chewable tablets instead of hard-to-recycle plastic toothpaste tubes and marketing beauty and skincare products at refill stations instead of in single-use bottles.[28] More brands need to aspire to this level of commitment and design innovation.

The company says it has kept packaging volumes flat despite portfolio growth and reduced its total waste footprint per consumer by 31% since 2010. This is encouraging but an absolute waste reduction commitment would have been stronger.[29]

> **Spotlight on Black Plastic:** In 2015, *As You Sow* recommended that the packaging industry find a way to recycle black plastic, a material that has traditionally been difficult for optical sorters to separate at materials recovery facilities. In 2019, Unilever delivered. The black plastic being used by Unilever's *Axe (Lynx)* and *TRESemmé* brands uses a new, Unilever-pioneered detectable pigment that now makes the material recyclable.[30] *As You Sow* recommends that Unilever share its newly developed technology to allow industry-wide innovation.

NESTLÉ "NEGATIVE LIST," PACKAGING INSTITUTE

Nestlé has published a "Negative List" of plastics it will phase out because they are unlikely to be recyclable.[31] These include polyvinyl chloride, polyvinylidene chloride, polystyrene, expanded polystyrene, regenerated cellulose, and non-recyclable plastics/paper combinations. These materials are found in plastic films, trays, printing inks, yogurt pods, ice cream cone lids, twist wraps, and laminated paper cups. Nestlé has also created an Institute of Packaging Sciences with 50 staff members to design more sustainable packaging and help the company meet its commitment to make 100% of packaging reusable, recyclable, or compostable by 2025.[32]

"We want to be a leader in developing the most sustainable packaging solutions for our food and beverage products. To achieve this, we are enhancing our research capabilities to develop new packaging materials and solutions," said Nestlé CEO Mark Schneider. "Through this, we hope to address the growing packaging waste problem, in particular plastics." The company also says it has avoided use of 118,000 tons of packaging between 2015 and early 2020.

COLGATE-PALMOLIVE COMPANY LAUNCHING FIRST RECYCLABLE TOOTHPASTE TUBE

Toothpaste tubes have never been recyclable at scale; they are made from a combination of different plastics, often wrapped around a thin layer of aluminum, making them impossible to recycle through conventional methods. An estimated 400 million toothpaste tubes are discarded every year in the U.S. (and at least 1.5 billion tubes globally). After several years of engineering and design work, Colgate-Palmolive Company recently launched what it

New recyclable toothpaste tube launched by Colgate-Palmolive's Tom's brand.
Photo courtesy of Tom's of Maine

calls the world's first recyclable toothpaste tube.[33] To make the recyclable tube, the company worked with high-density polyethylene, the "No. 2" plastic resin code, which is widely recycled and used to make milk jugs and other plastic bottles. Colgate-Palmolive Company is making the tube technology open source and inviting competitors to adopt it. It is unlikely that many new tubes will get recycled until several other brands make the switch, providing enough volume to make collection cost effective. This action was partly the result of shareholder action by *As You Sow*. Our engagement with Colgate-Palmolive Company culminated in a 2014 commitment by the company to make all packaging recyclable for three of its four product categories by 2020, and to develop "breakthrough packaging innovation" in the fourth category—toothpaste tubes.[34]

STARBUCKS, MCDONALD'S NEXT GEN CUP CHALLENGE, STRAW-LESS LID DESIGN

In 2018, Starbucks and McDonald's co-founded a $10 million NextGen cup challenge with a goal to re-design the traditional paper to-go coffee cup to make it fully recyclable and compostable within three years. The plastic lining of current paper cups prevents it from being recycled in many paper mills without special equipment. A broad competition led to 12 finalists in 2019, most of whom provided alternative materials to the plastic lining. Three of the finalists' solutions involve reusable or refillable cups systems, which could reduce or replace single-use cups. Several of the solutions are being pilot tested in 2020. Starbucks and McDonald's have been joined in the consortium by Coca-Cola Co., Yum! Brands, Nestlé, and Wendy's, raising the prospect that many brands using single-use cups can collectively switch to more sustainable alternatives. The cup challenge was announced in March 2018, one day before Starbucks' release of the results of an As You Sow shareholder proposal in which nearly one-third of shares voted supported our request for the company to greatly increase recycling of its single-use cups.[35]

Last year, Starbucks agreed to phase out plastic straws in its stores by 2020 and replace them with a newly designed lid for cold drips that slightly resembles children's sippy cup lids. Some critics say the new lids comprise more plastic than the company's previous lid and straw combination. The company stated at its launch, however, that the "cold drink lid uses 9% less plastic than the former lid and straw combined."[36] A key consideration is whether the lids will get recycled, unlike straws, which are not practical to recycle. The company says the straw-less lid is made from polypropylene, a "commonly-accepted" recyclable plastic that can be captured in recycling infrastructure. However, a recent Greenpeace report that surveyed materials recovery facilities accepting various plastics found that "only 31% of U.S. residents have access to polypropylene collection."[37]

Starbucks new cold drinks lid designed to replace the need for straws.
Photo courtesy of Starbucks

MANY COMPANIES COMMIT TO 100% RECYCLABLE PACKAGING

A key first step companies should take in reducing plastic pollution is to redesign packaging to make it 100% reusable, recyclable, or compostable so that packaging now going to landfill after a single use can be sent for recycling or composting. As noted above, New Plastics Economy Global Commitment has obtained such commitments from 66 packaged goods companies, 51 packaging producers, and 29 retail and hospitality companies; 15 of those signatories were subjects of our survey. Another six non-signatory companies surveyed made similar commitments although three of them will not achieve them until 2030 (see Figure 4).

As You Sow has led a shareholder initiative on this topic since 2014, engaging companies through dialogue and the filing of shareholder proposals. To date, five major companies have agreed to make their packaging recyclable after engagement with *As You Sow*—Colgate-Palmolive Company, Kraft Heinz Company, Mondelēz International, Procter & Gamble, and Unilever.[38,39]

FIGURE 4: Surveyed Companies with 100% Recyclable Packaging Goals

Figure 4 Notes: Clorox-Co., Coca-Cola Co., Colgate-Palmolive Co., Diageo PLC, Johnson & Johnson, Kellogg Co., Keurig Dr Pepper, MolsonCoors Beverage Co., Mondelēz International, Nestlé, Nestlé Waters NA, PepsiCo, Target Corp., Unilever PLC, and Walmart Inc. are signatories of the New Plastics Economy Global Commitment, which set 2025 goals for 100% packaging recyclability. Commitment parameters vary for non-signatories.

Campbell Soup Co., General Mills, and Procter & Gamble have goals for 2030.

Kimberly-Clark has goals for 2022.

However, technical recyclability or compostability will not mean much if these materials are not actually captured and processed. It is essential that corporate commitments are just the first step in a broader process of ensuring that the materials get recycled or composted in practice, or are placed in a system of perpetual reuse. Fortunately, the definitions of "recyclable" and "compostable" agreed to by New Plastics Economy Global Commitment signatories specify that to be able to use those terms, corporate packaging must actually be recycled or composted in practice and at scale. Companies need to get far more engaged in the process of how post-consumer materials are collected for processing and provide funding support through producer responsibility systems to ensure recycling and composting systems are greatly improved and expanded. These challenges will be discussed in more detail in Chapters 5 and 6.

WALMART INC. RECYCLING AND SUSTAINABLE PACKAGING PLAYBOOKS

Walmart Inc. has provided its suppliers with a "recycling playbook" discussing the most common packaging formats found in its stores and recyclability information for each type of plastic packaging based on existing infrastructure. The playbook is a supplement to the retailer's sustainable packaging playbook, which provides guidance on source reduction, recycled content, harmful chemicals to avoid, and designing packaging to be recycled.

PHASE OUT OF PROBLEMATIC MATERIALS

Problematic plastics are defined as those that are not reusable, recyclable or compostable. Problematic plastics require hazardous chemicals that pose health risks to produce, hinder or disrupt the recyclability or compostability of other items, or have a high likelihood of being littered or ending up in the natural environment. In 2018, *As You Sow* played a key role in decisions by two major global brands to stop using expanded polystyrene packaging, which is rarely recycled and breaks up into tiny pieces that fish mistake for food. Its production also poses human

health risks. The International Agency for Research on Cancer has determined that styrene, used in the production of polystyrene, is a possible human carcinogen. Following shareholder engagement and the filing of shareholder proposals, McDonald's Corporation agreed to phase out foam-based packaging by the end of 2018,[40] and Yum! Brands, the world's largest restaurant company, will phase out foam by 2022.[41]

In response to our survey, Keurig Dr Pepper said it is eliminating dark colored PET bottles that can contaminate clear PET streams from its portfolio, and PepsiCo said it is eliminating black plastic and labels that inhibit bottle recycling. The New Plastics Economy Global Commitment process is having an impact on more sustainable packaging design through its efforts pressing signatories to phase out problematic plastics. Approximately 60% of packaged goods companies, retailers, and packaging producer signatories that have or have had polystyrene, expanded polystyrene (foam), or polyvinylidene chloride in their portfolios, have eliminated or plan to phase them out. More than 70% of signatories have eliminated or are eliminating single-use straws, carrier bags, undetectable carbon black plastic, and polyvinyl chloride.[42]

Challenges

100% REUSE, RECYCLE, COMPOST GOALS ARE JUST A FIRST STEP

We are encouraged that the companies cited above are making pledges for their packaging to be 100% recyclable, compostable, or reusable, but this is just the first step in a truly systems-based approach to packaging sustainability. These commitments must be supplemented with elements of the other five pillars discussed in this report, such as alternative delivery systems like reuse and refill, high levels of recycled content, total reductions in use of plastic packaging, and far stronger efforts to finance systems that can work at scale to collect and recycle or compost materials.

DECIDING ON FLEXIBLE PACKAGING/POUCHES

The continued rapid growth of products using flexible packaging, such as pouches and sachets, and the lack of progress in the past five years on finding end-of-life solutions are major concerns. Several companies have suggested that these materials can eventually be collected and recycled using chemical recycling, which breaks the plastics back down to their molecular level. While technically possible, the infrastructure needed to collect and process flexibles at scale is a decade away, and it is not clear whether packaging makers and users would pay to build the infrastructure. Few companies pouring these materials onto the market have proposed interim solutions. One interim solution would be to move to packaging that is already recyclable. Another would be for companies that use pouches to pay to collect and store them until safe and effective recycling systems are available. One company that has proposed a possible design solution is PepsiCo, which is testing compostable packaging for its Frito Lay snack division to replace multi-layer flexible plastic chip bags. More details are included in Chapter 5.

COMPOSTABILITY CONUNDRUM

There is much discussion of the potential for making plastic packaging compostable as part of the solution to plastic waste. However, the industrial composting infrastructure needed to process compostable single-use food and beverage packaging is nascent. It is estimated that less than 2% of the U.S. population has access to the industrial composting facilities needed to process compostable plastic packaging and cutlery.[43] As a result, brands contemplating or already committed to compostable materials need to help finance greatly expanded composting infrastructure and not distribute compostables in areas without the capacity to process them. Putting compostable food service ware and packaging into commerce in areas without adequate composting infrastructure is a waste of time and money. Compostable packaging makers also need to take steps to more prominently mark products as compostable and ensure that their materials are verified as compatible with existing ASTM D6400 or D6868 standards for composability.

Even in areas that can process food ware and packaging, some composting companies are not happy with the process or results. In 2019, a group of Oregon industrial composters, including solid waste and recycling giant Republic Services, Inc., issued a statement saying they do not want to process compostable packaging and service ware because not all "certified" compostable items break down as fully or quickly as required, and composting streams are contaminated with many non-compostable items that must be separated out, adding to labor costs. Compost contaminated with plastic fragments lowers the value of the product, making it harder or sometimes impossible to sell, the group said. Compostable packaging can also contain harmful persistent chemicals linked to human health impacts, which could leach into the resulting compost; see "Toxic Packaging" section below for more details.[44]

BIO-BASED PLASTICS

Some companies have invested in bio-based plastics made from renewable biomass materials like corn starch and sugar cane to reduce reliance on plastics made from fossil fuels. Coca-Cola Co. has produced a biologically sourced form of PET plastic from sugarcane. Its plastic PlantBottle™ is about 30% sourced from plants. The bottle is chemically and physically the same as PET, so it can be recycled with other PET bottles. Similarly, PepsiCo, Nestlé, and Danone are among major brand members of NaturALL Bottle Alliance, a research consortium seeking to develop a 100% bio-based bottle. Bio-based plastics may offer environmental advantages over their fossil-based counterparts, but it depends on the specific feedstock used in their production, method of production, product lifetime, and end-of-life treatment, according to World Wildlife Fund.[45] There are challenges associated with bio-based plastics since some are compostable rather than mechanically recyclable, resulting in consumer confusion. For example, bio-based polylactic acid (PLA) plastic is used by some brands for beverage cups and salad clamshell containers. PLA is compostable rather than mechanically recyclable, but since PLA looks similar to PET, consumers often place it into plastic recycling bins. High levels of PLA can contaminate PET and other recycling streams, so these materials must be far more prominently marked as compostable. Even properly sorted and collected bio-based plastic is not a solution to the plastic pollution crisis by itself, providing only incremental benefits.

STARBUCKS AND PEERS NEED TO PRESS LOCALITIES TO PROCESS SINGLE-USE PAPER CUPS

If the NextGen cup consortium discussed above being promoted by Starbucks, McDonald's, and their peers is to be ultimately successful, it will need to do more than make cup liners recyclable. Local waste and recycling collection companies will not accept cups in consumer recycling bins unless there are local markets that process the cups. A second phase of engagement will be needed to convince localities to accept cups in recycling bins and find paper mills globally willing to accept fiber-based cups for recycling as part of mixed paper bales or willing and able to compost them. More promising is Starbucks' focus on testing reusable and refillable cup schemes that could greatly reduce the need for single-use cups.

TOXIC PACKAGING

This report focuses on packaging end-of-life issues, but stakeholders should be aware that toxicity in packaging is another important packaging sustainability issue. A current concern is the presence of per- and polyfluoroalkyl substances (PFAS), a group of industrial chemicals used in consumer products since the 1950s. PFAS have been used in non-stick cookware, water-repellent clothing, and more recently in paper food packaging. Studies indicate that PFAS can cause reproductive, developmental, liver, kidney, and immunological effects in laboratory animals. Whole Foods Market Inc. has removed PFAS from some of its packaging, and other grocers and quick-service chains have made similar commitments in recent months. Taco Bell has pledged to remove PFAS, phthalates, and bisphenol A from its packaging by 2025. For more information, consult the Retailer Report Card published by the Mind the Store campaign.[46]

Recommendations

- Far more companies need to show evidence of prioritizing redesign of their packaging and move toward alternative delivery models like reuse or refill, or, at a minimum, make their packaging recyclable or compostable.
- Companies should match packaging design to available post-consumer solutions. A food or beverage package must be designed to accommodate systems that can actually recycle or compost their materials. Companies offering compostable packaging should only use it in areas that can process it with industrial compost operations and in such a manner that does not harm the composting process or product.
- No more goods should be placed in flexible plastic until these materials can be viably recycled or composted at scale.
- Fast food companies and retailers should end free provision of single-use items, such as cutlery, single serve condiments in non-recyclable pouches, and plastic bags, and in the longer term offer reusable alternatives.
- Companies that create environmentally innovative packaging, like Unilever's black plastic pigment, should foster sector- or industry-wide adoption of that packaging, increasing the chance that innovations can be used universally and at scale.

Packaging Design Metrics Summary

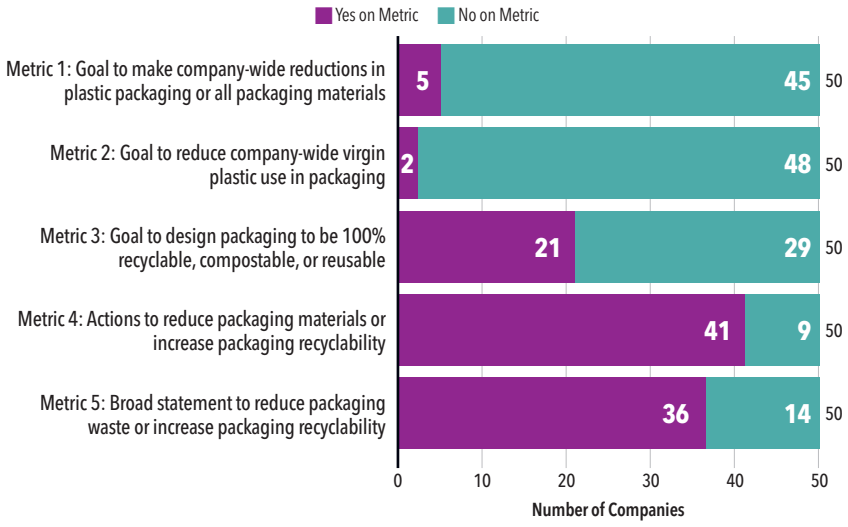
A summary of how companies performed on Packaging Design metrics follows in Figure 5.

For full details on scores attained by each company surveyed on each pillar metric, refer to our online data visualization tool.

Highlighted Results:

- Under Metric #1, only 5 companies showed evidence of company-wide goals for absolute reductions in packaging: Kroger Company, The Hershey Company, Hormel Foods Corporation, Diageo PLC, and Unilever.
- On Metric #2, two companies affirmed that they had a goal to reduce company-wide virgin plastic use in packaging: Procter & Gamble, and Unilever.

FIGURE 5: Pillar #1 – Packaging Design Grades



- Twenty-one companies achieved Metric #3 to design packaging to be 100% recyclable, compostable, or reusable.
- The only metrics achieved by most companies were actions to, and broad statements committing the company to, reduce packaging or increase recyclability, Metric #4 and Metric #5.

2 REUSABLE PACKAGING

The metrics for evaluating company performance on Pillar 2, Reusable Packaging, are:

- Company generates 15% or more of annual revenue from reusable packaging products
- Goal to increase company-wide reusable packaging delivery methods
- Actions or pilot programs to use reusable packaging
- Company has broad statement to support reusable packaging actions

Reusable Packaging Overview

An essential element in reducing plastic pollution is adoption of reusable and refillable packaging that moves society toward a consumer culture of low- to zero-waste product delivery to replace single-use packaging. Nine of the top 10 items found in Ocean Conservancy's annual beach cleanup are single-use plastic items—bottles, bags, lids, plates, cutlery, and related accessories.[48]

Reusable packaging, like sturdy glass, metal, or plastic bottles for beverages or food containers that can be used or refilled multiple times, can reduce or eliminate the need for single-use packaging. Reusable packaging can minimize millions of tons of plastic waste generated by single-use packaging and take a giant step toward a circular economy for packaging.

Shifting to reusable packaging often requires companies to use innovative design and prioritize new business models, as well as return to older models. Reusable packaging was once the norm for the beverage sector. In the mid-20th century, beverages like milk and soft drinks were delivered in refillable bottles that were returned for cleaning and refilled many times over. Consumers paid a deposit that was refunded when the bottle was returned to a store, resulting in very high return rates. But, in the 1960s, refillables were phased out in favor of single-use plastic, which was marketed as modern and convenient.

There is currently no standard unit for measuring progress in the emerging area of low- to zero-waste product delivery. One measure is the number of single-use packaging units that have been replaced through increases in alternative delivery methods. However, few companies currently disclose the number of units they sell, and no companies reviewed had a goal to decrease the number of units they sell or an alternative goal to track progress in alternative delivery methods.

TOP PERFORMERS

Some of the top scorers in this area were Unilever for its "Less, Better, No Plastic" initiative featuring package-less products; Coca-Cola Co. and Nestlé Waters NA for generating 15% of corporate revenue from reusable beverage containers; and beer maker Anheuser-Busch InBev for selling 43% of its products in refillable containers. PepsiCo and Coca-Cola Co. have also been developing vending systems for reusable containers in institutional settings, and Starbucks is working toward increasing the use of reusable cups used in stores.

Leadership Actions

BIG BRANDS TEST HOME DELIVERED REUSABLES

The milkman who delivered milk in bottles to customers' homes is the idea behind Loop, an innovative, state-of-the-art circular shopping system. Name-brand products are shipped directly to customers in stylish reusable containers that are returned and refilled. A deposit is charged to ensure the containers are returned for cleaning and reuse.

Loop was developed by TerraCycle, a New Jersey company known for finding clever ways to turn hard-to-recycle packaging into new products. TerraCycle CEO Tom Szaky developed the concept and convinced major global brands like The Clorox Company, Colgate-Palmolive Company, Nestlé, PepsiCo, Procter & Gamble, and Unilever to participate. In essence, Loop shifts the ownership model of packaging from consumer to company by eliminating disposable packaging that comes with most goods purchased at stores.

After nearly a year of operation, Loop does not disclose specific sales figures or costs but says it has several thousand customers and around 300 brands either already selling Loop products or in the process of onboarding to Loop's platform. Loop is currently available in parts of the Northeast U.S. and Paris, France, and has acquired financing to support its expansion across the U.S. and internationally to Canada, the UK, Australia, Germany, and Japan.

Founder Szaky said, "[W]e realized that recycling and using recycled content is about trying to do the best you can with waste, but it's not solving the foundational reason we have waste. We did a lot of reflection on that and realized that the foundational cause of garbage is disposability and single-use. We tried to come up with a way to solve for disposability but maintain the virtues of disposability, which are convenience and affordability."[49]

Resuable packaging offered by Loop.
(Photo courtesy Loop US)

Loop has announced partnerships with U.S. retailers Kroger Company and Walgreens, which are expected to start later this year. Stores will likely have a designated aisle or space dedicated to Loop's reusable products, according to Brian Matuszewski, Loop's global lead for innovation and strategic alliances. Customers will be able to drop off those empty containers at designated spots inside stores. Loop consults on packaging design with brands, but brands take on the cost for designing and manufacturing their reusable containers. Loop will support its retail partners with reverse logistics activities, such as collecting and cleaning empty post-consumer containers. Outside of the U.S., Loop is partnering with retailers Carrefour in France, Tesco in the UK, Loblaws in Canada, Woolworth's in Australia, and Aeon in Japan.

Algramo Intelligent Dispensing System: Where Loop serves a middle- to higher-end customer base, Algramo is a startup that serves low- and middle-income neighborhoods in Santiago, Chile. Algramo is providing an intelligent dispensing system in small, family-owned stores and via electric tricycles that deliver goods like pet food and cleaning products directly to local neighborhoods. Shoppers buy reusable containers through an online account, which manages credits for refilling and store loyalty rewards for reusing packaging. Each time customers refill their containers with product, they earn credit that equates to a 10% discount on their next purchase. Members can arrange a visit of a mobile electric tricycle via an app. Unilever and Nestlé are piloting with Algramo, and their products are available through the dispensing system. Algramo already supports a network of over

Algramo electric tricycle offering cleaning products in reusable containers in Santiago, Chile.
(Photo courtesy Algramo)

2,000 family-owned stores that reach over 325,000 customers in Santiago, and reuse rates by customers have risen to more than 80%.[50] It expects to be piloting soon in corproate supermarkets. Closed Loop Partners is now the implementation partner of Algramo operations in the U.S. Algramo U.S. will be distributing home care and other products in multi-family apartments and other strategic high traffic areas in the latter half of 2020. Algramo U.S. will initially start in New York City.[51]

UNILEVER'S "LESS, BETTER, NO" PLASTIC INITIATIVE

In 2017, Unilever adopted a policy to transform its approach to plastic packaging through a "Less, Better, No" framework. The company pledged to rethink how it designs products and packaging to use less plastic, better plastic, or no plastic, exploring areas such as modular packaging, design for disassembly and reassembly, and wider use of refills, recycling, and post-consumer recycled materials in innovative ways. An example of "Less Plastic" is its Cif household cleaner, which provides a concentrated "ecorefill," allowing consumers to refill and reuse the original product spray bottle, eliminating 75% of plastic packaging—and it is 100% recyclable.[52] A "Better Plastic" example is the previously cited pigment added to black plastic developed by the company, allowing these materials that were previously not recognized by scanner recycling equipment to now be captured for recycling. Examples of "No Plastic" cited by the company include shampoo in bar form rather than bottles, toothpaste tablets, cardboard deodorant sticks, and bamboo toothbrushes.[53]

COCA-COLA CO.'S GOAL FOR 50% REFILLABLE PACKAGING IN BRAZIL BY 2030

Coca-Cola Co. has a goal to increase its refillable bottle program in Brazil to represent 50% of sales by 2030, using bottles that will be cleaned and reused to avoid single-use packaging. Switching to refillable beverage bottles can have a significant impact on reducing plastic pollution. Increasing the market share of refillable bottles by 10% in all coastal countries in place of single-use, throwaway PET bottles could reduce PET bottle marine plastic pollution by 22%, according to a recent Oceana study.[54] In 2018, Coca-Cola Co. Brazil invested $25 million to standardize the design of reusable PET bottles and $400 million to expand reuse infrastructure for bottle cleaning and refilling facilities as part of scaling up to meet the 2030 goal.[55]

Customers pay an indirect deposit when purchasing soda in a refillable bottle by receiving a discount on their next purchase when they return the empty bottle to the store, which incentivizes a high return rate. Retailers store empty bottles and return them to Coca-Cola Co. upon delivery of a new order. This model already replaces 200 million single-use bottles per year in Brazil.

PEPSI BUYS SODASTREAM, EXPANDS BUSINESS

In 2018, PepsiCo acquired SodaStream, a company that allows people to make sparkling water and beverages at home using a machine and refillable cylinders, avoiding delivery in a bottle. In 2019, the company announced an expansion of SodaStream's business and projected it could lead to an estimated 67 billion plastic bottles being avoided cumulatively through 2025.[56]

GLOBAL COMMITMENT REUSE MODELS

As noted above, the New Plastics Economy initiative projects that 20% of single-use plastic packaging has the potential to be converted to a reusable format. The initiative's recent Global Commitment progress report concluded that 43 signatories are piloting some form of a reuse model. However, less than 3% of signatories' packaging by weight is reusable today, signifying the enormous task ahead for companies to transition to scaled reuse models. The New Plastics Economy team's report *Reuse: Rethinking Packaging* provides an excellent framework to understand reuse models, along with 69 examples of current models.[57]

STARBUCKS AGREES TO TRANSITION TOWARD REUSABLE BEVERAGE CONTAINERS

In January 2020, following extended engagement with *As You Sow*, Starbucks Corp., the world's largest coffeehouse company, agreed to position the company toward what could be a historic shift away from single-use packaging that ends up in landfills, which, if successful, could dramatically alter how its beverages are delivered.[58]

In 2008, Starbucks pledged that by 2015, it would serve 25% of beverages in reusable containers like ceramic mugs. Those efforts largely flopped. Ten years later, less than 2% of company beverages were served in reusable cups, and, for two years, *As You Sow* filed shareholder proposals asking the company to develop a new strategy for boosting reusables. A strong 44% vote on the proposal by shareholders in 2019 led to more productive dialogue and an agreement.[59]

The company will pursue a parallel track of making existing single-use cups more recyclable and recycled in the short term while also pursuing long-term efforts to shift to reusable containers. The company's NextGen Cup Challenge (in collaboration with McDonald's) seeks to alter the composition of paper cups to make them more recyclable and compostable in many markets over the next three years. To boost adoption of reusables, the company pledged to undertake comprehensive market research and trials on consumer adoption of reusable containers over the next year and set a strengthened reusables goal in 12 months based on research results. At least one competitor has already made a similar commitment. The Blue Bottle coffee chain owned by Nestlé had previously agreed to eliminate disposable single-use cups at nearly all its 70 locations by the end of 2020.[60]

If Starbucks follows up aggressively on its commitment, it could lead to dramatic reduction or eventual phase out of billions of single-use beverage containers and provide a model for peers to use in transitioning to reusables.

COCA-COLA CO., PEPSICO DISPENSERS DESIGNED FOR REUSABLE CONTAINERS

Coca-Cola Co. and PepsiCo have rolled out package-less delivery systems for some of their beverages on college campuses and institutional settings to gauge consumer acceptance of buying beverages in their own reusable container. Coca-Cola Co.'s system, PureFill, dispenses water and carbonated drinks. It was tested on several college campuses where students use an app to get free filtered water or pay for sparkling beverages or flavored water dispensed into their reusable bottles. Coca-Cola Co. has now expanded the program to 100 college and corporate campuses. PepsiCo's platform is similar, including a water/beverage dispenser, companion smartphone app, and personalized QR code stickers for reusable bottles that allow customers to be recognized by the dispensers.

NEARLY HALF OF COMPANIES SURVEYED HAVE REUSE PILOT OR ACTION

As You Sow identified some form of reusables actions or pilot programs for 24 of the 50 companies surveyed for this study. Here are some examples: Burger King says it has implemented a reusable cup system for in-store guests at locations in India and Korea. Dunkin' says it served 31 million beverages in reusable mugs over the past two years. Keurig Dr Pepper sells a reusable coffee filter, My K-Cup®, which can be filled with any ground coffee. McDonald's restaurants in Germany serve all in-house hot drinks in porcelain or glass mugs. Target Corporation reuses its plastic garment hangers. For brief descriptions of all 24 programs identified, see Appendix C.

Notable Trend

Bottled water, once the fastest-growing drink category, has seen its growth slow. Now the fastest-growing category is tap or filtered water as consumers turn to reusable water bottles due to concerns about single-use plastic, according to market research firm NPD Group.[61] Between June 2018 and June 2019, 105 million water bottles were sold in the U.S., or roughly one bottle for every three Americans.[62] "In turn, the [reusable] water bottle has been elevated to a fashion accessory akin to a status-reeking briefcase or designer handbag," says the *Wall Street Journal*.

Challenges

NEEDED: BOLD REUSABLE PACKAGING GOALS

While many companies have company-wide goals such as creating 100% recyclable packaging, few companies have made bold goals to transition the majority of their business to reusable packaging or related low- to zero-waste delivery models. It is encouraging to note that two companies—Coca-Cola Co. and Nestlé Waters NA—derive at least 15% of revenue from reusable packaging products. However, this likely reflects ongoing and historical operations, not necessarily recent replacement of single-use units of packaging with new reusable models.

EXPANDING REUSABLE BUSINESS MODELS

A key challenge for companies is to find innovative product delivery methods that avoid packaging altogether. While actions such as PepsiCo's acquisition of SodaStream show that companies are exploring new business models to support reusable and low- to zero-waste delivery, the majority of companies have yet to seriously consider reusable packaging. For example, in the food and beverage sector, companies can switch to in-store reusable plates, cutlery, and cups. Similarly, companies in the consumer packaged goods sector need to build on the model developed by Loop and greatly expand the sales of refillable containers and transition their business model away from single-use packaging.

STICKING TO COMPANY GOALS

Companies often renege on stated goals and hope that no one is paying attention as they downgrade or abandon them. The Starbucks discussion above shows how *As You Sow* and activist groups kept pressing the company after it failed to meet its original reusables goal in 2015 until it agreed to come back with a more comprehensive plan to transition to reusables. Similar vigilance is required to ensure that the numerous companies that have made some sort of plastics-related pledge to the New Plastics Economy Global Commitment actually follow through. Stakeholders will need patience and resources to keep monitoring and pressing companies for many years.

Recommendations

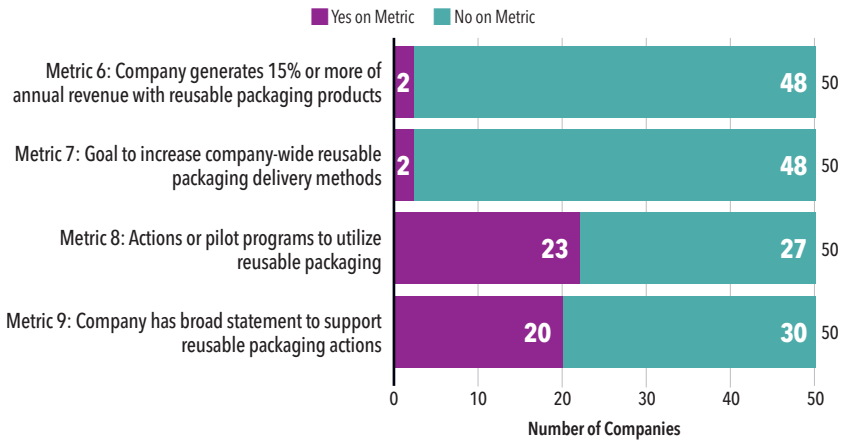
- Culture change is required for circular economy design. Far more companies must take leadership roles in creating a circular economy culture to remain relevant in a world where consumers are increasingly preferring choices that promote sustainability, improve health, and reduce pollution problems, such as ocean plastics. They can do so by collaborating with packaging designers, marketers, and sustainability staff to develop low- to zero-waste delivery models. These values and policies must then be communicated to a company's supply chain and waste management system as well as reflected in investments and resulting transactional behavior. While some companies have adopted a broad statement to work toward these goals or have put some pilot projects in place to reduce waste, companies must begin demonstrating evidence of creating a culture that prioritizes designing for zero waste across a product's lifecycle to be successful over the long term.
- It is encouraging that so many of the companies are invested in pilot reuse and low- to zero-waste product delivery. However, for these projects to make a dent in the plastic pollution crisis, they must be heavily invested in over a short period of time to be brought to scale. Low- to zero-waste packaging solutions should receive an equal or greater amount of corporate attention as do investments in recyclability.
- In addition to shifting corporate culture to prioritize low-to zero-waste delivery of goods, companies should begin to set goals to generate an increasing amount of revenue from sales of such products. This sends a signal to stakeholders and corporate peers, as well as consumers, that these commitments are serious and being formally planned for and budgeted by design, marketing, and operations staff. While many companies are talking the talk by setting non-binding goals, companies need to set metric-based goals as a percentage of total company revenue to seriously walk the walk.

Reusable Packaging Metrics Summary

A summary of how companies performed on Reusable Packaging metrics follows in Figure 6.

For full details on scores attained by each company surveyed on each pillar metric, refer to our online data visualization tool.

FIGURE 6: Pillar #2 – Reusable Packaging Grades



Highlighted Results:

- Only two companies, Nestlé Waters NA and Coca-Cola Co., have reusable product revenue that is disclosed and is at or above 15%.[63]
- Two companies—Starbucks, Anheuser-Busch InBev — have established a goal to increase company-wide reusable packaging.
- Some form of action or pilot program involving reusable packaging was identified by 23 of the 50 companies surveyed. Appendix C contains brief descriptions of these programs.

3 RECYCLED CONTENT

The metrics for evaluating company performance on Pillar 3, Recycled Content, are:

- Company currently uses 5% or more of recycled content in company-wide plastic packaging
- Goal to use recycled content in company-wide plastic packaging
- Use of recycled content in some types of plastic packaging
- Actions to source fiber from recycled or responsible sources
- Statement or actions to increased recycled content

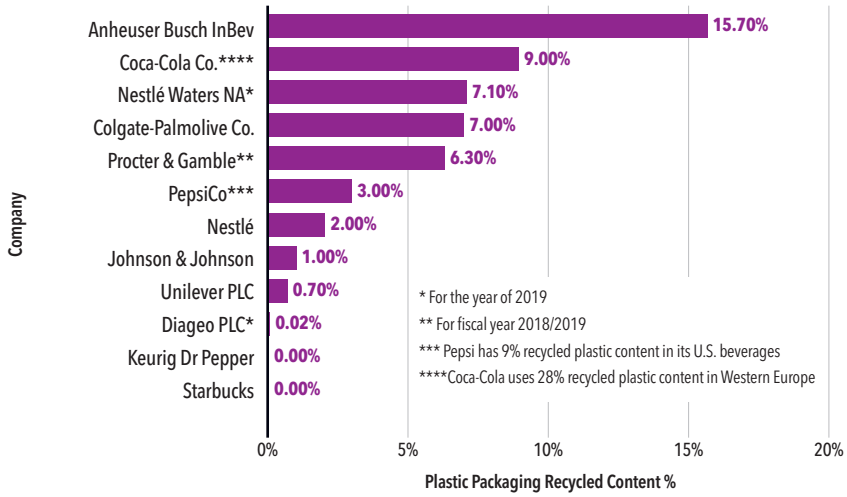
Recycled Content Overview

High levels of recycled content in packaging are essential to reduce packaging waste and create a genuine circular economy for packaging. Local curbside programs and collection companies will not collect materials for recycling if there is not a viable, long-term market for them or an entity to pay the costs of pickup and processing. For plastics, in particular, recycled content goals from large user brands are essential to stimulate demand for collection and recycling and create new markets for recyclable plastics where few currently exist.

Brand commitments to use high levels of recycled content send an important market signal to local collectors that if they capture these materials, there will be a market for them. Development of new domestic markets for plastics, paper, glass, and aluminum can help ease the current recycling crisis in many communities where recyclable plastics and other materials are being landfilled for lack of domestic markets. Long-term commitments to high levels of recycled content by user brands, coupled with long-term contracts with recycling processors, are among the most important factors in increasing U.S. recycling rates.

For all materials, using the highest levels of recycled content possible is essential to decouple from finite virgin feedstocks. Another benefit is that the energy savings from using recycled materials in beverage containers is significant. Making cans from recycled aluminum instead of virgin ore requires 90% less energy and 90% fewer greenhouse gas emissions than creating a can from new metal, and a recycled can could be back on the shelf of a store in 60 days.[64] Plastic bottles made from recycled PET use 84% less energy and emit 71% fewer greenhouse gases than those made with virgin PET.[65]

FIGURE 7: Recycled Content Used in Company-Wide Plastic Packaging in 2018



TOP PERFORMERS

Seventeen of the 50 companies studied set company-wide recycled content goals for plastic, such as Diageo PLC's goal for

40% recycled content in plastic bottles by 2025 and 100% by 2030,[66] along with Nestlé Waters NA's 50% by 2025 for plastic bottles in the U.S., and Coca-Cola Co.'s 50% for all packaging and Unilever's 25% in plastic packaging, both by 2025. (See Figure 9.) One of the top-scoring companies in this pillar was Anheuser-Busch InBev, which surpassed 5% current recycled content in plastic, reporting 15.7% recycled PET content for 2018 (see Figure 7).[67] Colgate-Palmolive Company has achieved notable recycled content; as of 2018, 42% percent of overall packaging and 7% of its plastic packaging came from recycled sources.[68] Having set strong goals, some of these companies have a steep hill to climb. As of 2018, only 0.02% of Diageo PLC's and 0.7% of Unilever's plastic packaging contains recycled content.

Leadership Actions

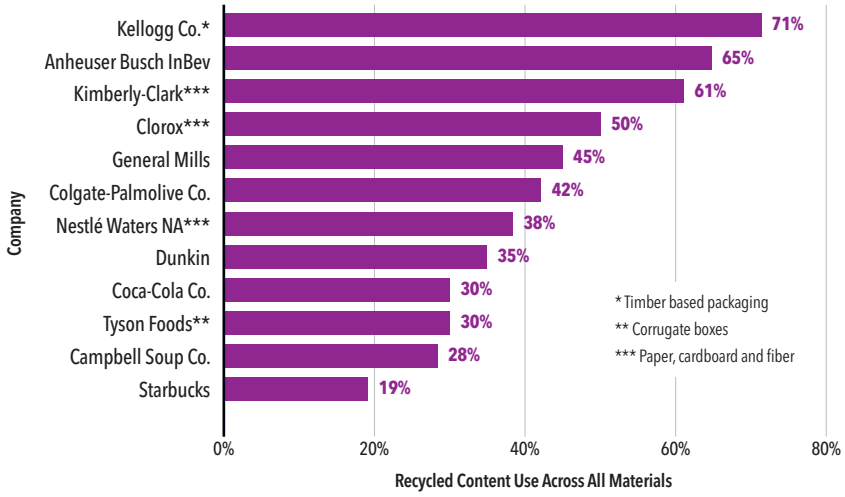
NESTLÉ AGREES TO PAY ABOVE-MARKET RATES FOR RECYCLED PLASTIC

Nestlé recently announced plans to spend up to $2 billion to start to shift its packaging from virgin plastics to food-grade recycled plastics. The food giant said it would buy up to two million metric tons of food-grade recycled plastics and devote $1.6 billion to pay a premium for these materials through 2025.[69] Nestlé reported using a total of 1.7 million tons of plastic packaging in 2018. This move is significant because it upends economic norms in this sector. Companies have historically balked at buying recycled content if pricing for recycled materials, which fluctuates, was more than for virgin materials. Nestlé's willingness to pay a premium price signals recognition by the company that the environmental impacts of plastic pollution, or perhaps at least public pressure, can sometimes trump traditional lowest cost considerations. "We are taking bold steps to create a wider market for food-grade recycled plastics and boost innovation in the packaging industry. We welcome others to join us on this journey," stated Nestlé CEO Mark Schneider.

PEPSICO TO CUT USE OF VIRGIN PLASTIC BY 20% ON BEVERAGE SIDE

PepsiCo, which asserts that it is already one of the largest users of food-grade recycled content, recently set a target to reduce use of virgin plastic by 20% on its beverage side by 2025, relative to a 2018 baseline. The company said this could reduce its virgin plastic use by more than two million tons. It is the only major beverage company maintaining a consistent amount of recycled PET content (around 10%) across all its plastic beverage bottle brands in the U.S. since 2005.[70] PepsiCo has pledged to increase its recycled content plastic to 25% by 2025.[71] Some of its brands will boost content sooner. PepsiCo's premium water brand LIFEWTR will be packaged in 100% recycled PET in the U.S., as the company's Naked Juice brand currently is, and its bubly sparkling water will no longer be packaged in plastic, starting in 2020 (see Figure 9).

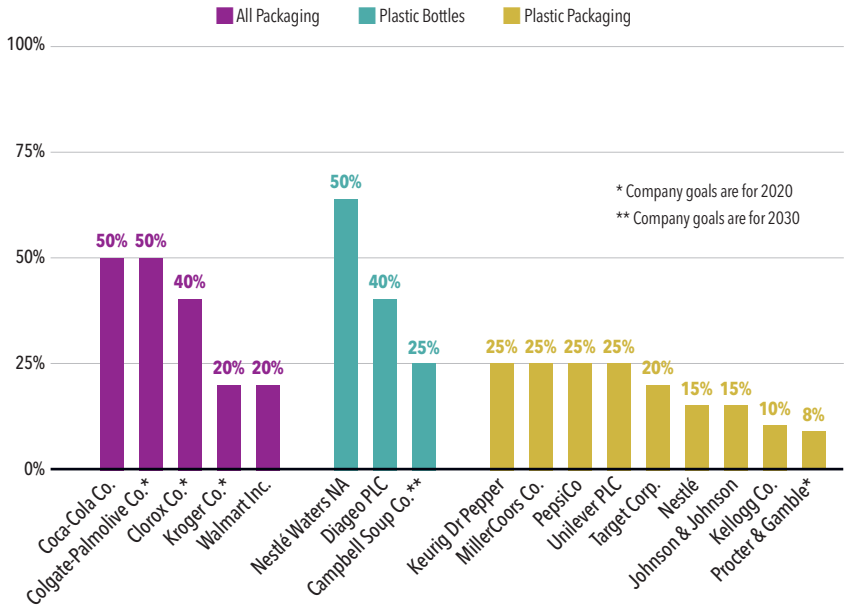
FIGURE 8: Recycled Content Use Across Some or All Packaging Materials



NESTLÉ WATERS NA EYES 50% RECYCLED CONTENT BY 2025

Nestlé Waters NA says it is on track to quadruple use of recycled content over the next three years and reach 50% recycled content across its U.S. domestic portfolio by 2025 (see Figure 9). It claims to be the only company with three nationally distributed bottled water brands already using 100% recycled plastic (Pure Life, Poland Spring Origin, and Pure Life Kids Buddies.) Also notable, in 2019, Nestlé Waters NA became the first beverage company to support the creation of a mandatory recycled content standard in California.[72]

FIGURE 9: Recycled Content Goals for 2025



KELLOGG COMPANY'S LONG HISTORY OF USING RECYCLED CONTENT

Kellogg Company has been using recycled content in its cereal boxes since their introduction in 1906. Today, the company uses 71% recycled content in its fiber-based packaging (see Figure 8). Kellogg Company has also committed to sourcing 100% of timber-based packaging from recycled or certified sustainable sources and using 10% recycled content in plastic packaging.[73]

Challenges

HOW WILL RECYCLED CONTENT GOALS BE MET?

Many of the recycled content commitments noted above are impressive. A recent report on progress made by signatories of the New Plastics Economy Global Commitment concluded that packaged goods companies and retailers committed to an average of 22% recycled content in their packaging by 2025, a five-fold increase on their 2018 average of 4%. Yet, the promising recycled content goals cited above by many brands raise the thorny question of how they will find sufficient feedstock. Brand owners are under increasing pressure to use far higher levels of recycled PET for their plastic packaging, but the U.S. does not have nearly enough supply or processing capacity for the recycled PET required to meet the targets set by brands, according to the National Association for PET Container Resources. Dave Cornell, former technical director of the Association of Plastics Recyclers, has stated that for PepsiCo, Coca-Cola Co., and others to meet their recycled content goals, an unprecedented effort will be required to more than double the U.S. recycling rate for PET bottles to 70%, which has hardly budged over the last decade. Barely 30% of PET bottles are collected in the U.S. for recycling, despite being in great demand by the beverage, textile, and carpet industries. Of those bottles collected, only 6% are being made back into bottles, with 48% used for non-bottle applications such as carpet fiber, strapping, and textiles.[74]

To achieve a uniform 25% recycled plastic content rate in beverage bottles, an additional 1.6 billion pounds of resin will need to be collected, equivalent to a 27% increase in the PET plastic recycling rate, which has hovered between 28 and 31% over the last decade, according to an analysis by The Recycling Partnership. A staggering four billion pounds of PET are wasted to landfill, incineration, or litter annually.[75,76]

A staggering four billion pounds of PET are wasted to landfill, incineration, or litter annually.

Part of the reason for low collection rates is that only 10 states have a container deposit law. States with container deposit laws are known to have far higher collection rates than non-deposit states. Ironically, for decades, companies like Coca-Cola Co. and PepsiCo have lobbied strongly against bottle bill laws that could have dramatically increased the level of post-consumer recycled PET available to help meet their goals. That may be one reason why, in new data presented to *As You Sow* for this report, Coca-Cola Co. has softened its opposition to deposit laws, as discussed below in Chapter 5. Beverage companies are also turning to chemical recycling startups, some of which can process low-grade PET into food-grade plastic suitable for bottles, hoping they can make up for some of the lack of post-consumer PET available for recycled feedstock. Further discussion is in Chapter 5.

COCA-COLA CO. REPEATEDLY MISSES RECYCLED CONTENT GOALS

Coca-Cola Co. has missed several opportunities to optimize recycled content PET. In 1990, it set a 25% U.S. recycled content goal that was quietly dropped in 1994.[77] Coca-Cola Co. and PepsiCo pledged to *As You Sow* in 2003 to use 10% recycled PET in the U.S. market by 2005. PepsiCo met that goal and has sustained it to the present.[78] Coca-Cola Co. briefly met the goal but then fell back a year later and has been unable to sustain 10% recycled content. Then, in 2011, it set a dubious "combined" global goal of 25% recycled or renewable content by 2015. Renewable content refers to biologically derived PET resin. While use of bio-based plastics can be positive, combining recycled content and renewable materials usage goals allowed the company to avoid disclosure of the specific amount of recycled PET it was using. Yet, the company could not meet even this watered-down goal. In its 2015 report, Coca-Cola Co. said its progress was "off track," with just 12.4% of packaging made with recycled or renewable material. The company told *As You Sow* in April 2020 (17 years after promising to get to 10%) that it had a current recycled PET average content of 9% in the U.S. market. We have applied a penalty metric to Coca-Cola Co.'s score in this report due to repeated failures to attain recycled content goals.

LEVELS OF TOTAL RECYCLED PLASTIC CONTENT ACROSS ALL BRANDS REMAIN LOW

While several companies have a few specialty beverages or specific brands packaged in plastic bottles with as much as 100% recycled content, only one company surveyed, Anheuser-Busch InBev, reported using more than 10% recycled plastic content across all its brands.

Recommendations

- Beverage companies, packaged goods companies, and retailers must support deposit laws and producer responsibility policies to increase the capacity of the U.S. recycling system to collect sufficient amounts of post-consumer plastic to meet company recycled content goals.

- There is generally no penalty when companies fail to meet their recycled content goals. We have penalized Coca-Cola Co.'s ranking in this report for repeated failures to meet recycled content goals. One way to put teeth into commitments is for companies to prioritize reaching long-term contracts with recycling processors to send a signal to processors that they will have paying customers buying their recycled plastic feedstock for many years. That, in turn, sends a signal to local recycling and waste collection companies like Waste Management, Inc., and Republic Services, Inc., to invest in expanded efforts to collect more of the marketable plastics from customers curbside.
- Coca-Cola Co. and other companies that promise to use high levels of recycled content should follow Nestlé's lead and commit to paying higher, above-market prices for recycled content plastic to help further develop this market.
- As pressure mounts on companies to commit to high levels of recycled content, the potential for fraud will increase. Companies must take steps to certify that their recycled content is from post-consumer sources. The Association of Plastics Recyclers is working on a program to conduct such certifications.

Recycled Content Metrics Summary

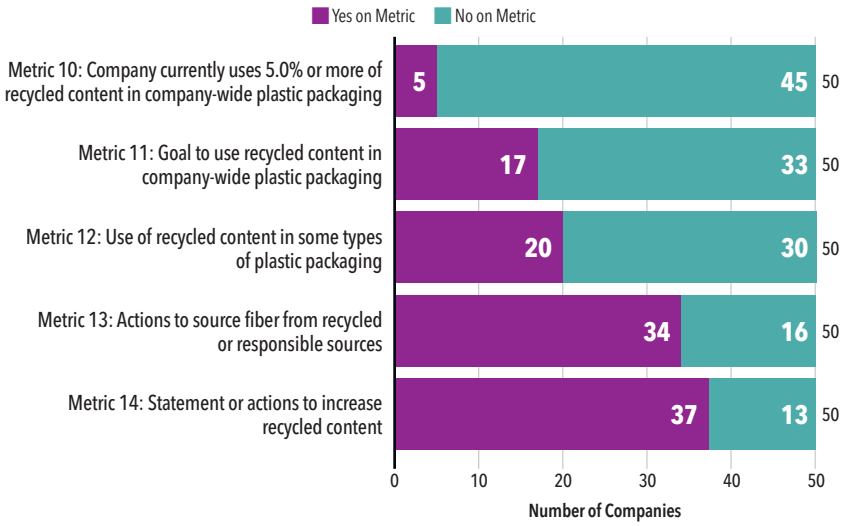
A summary of how companies performed on Recycled Content metrics is summarized in Fig 10.

For full details on scores attained by each company surveyed on each pillar metric, refer to our online data visualization tool.

Highlighted Results:

- Only five companies, Anheuser-Busch InBev, Coca-Cola Co., Nestlé Waters NA, Colgate-Palmolive Company, and Procter & Gamble are currently using more than 5% recycled content in company-wide plastic packaging.

FIGURE 10: Pillar #3 – Recycled Content



4 PACKAGING DATA TRANSPARENCY

The metrics for evaluating company performance on Pillar 4, Packaging Data Transparency, are:

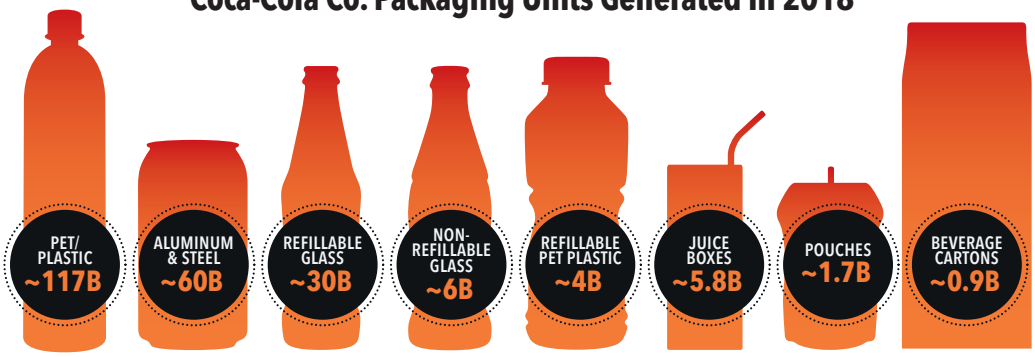
- Reports tonnage or volume of all packaging materials
- Reports tonnage or volume of plastic packaging
- Reports units of all types of packaging
- Reports units of plastic packaging
- Reports percentage of packaging made from any kind of post-consumer recycled content
- Reports percentage of packaging made from post-consumer recycled plastic
- Reports percentage of all packaging that is reusable, recyclable, or compostable
- Reports percentage of plastic packaging that is reusable, recyclable, or compostable
- Reports percentage of sales that uses reusable packaging
- Reports percentage of annual sales revenue that is dedicated to supporting end-of-life infrastructure

Packaging Data Transparency Overview

Packaging data transparency informs investors and stakeholders about how much packaging companies are using and, especially in the case of plastic, discloses company progress toward sustainably managing their packaging pollution and waste. Packaging transparency metrics should include the amount of packaging generated measured in weight or volume and units of packaging, as well as goals for reductions in overall plastic use and reduction of single-use plastic units put into commerce. It should provide a clear baseline against which to measure progress.

Companies should include disclosures of goals for reductions in overall plastic use in annual corporate social responsibility reporting, so investors and stakeholders can better assess corporate policies and practices responsive to the risks posed by plastic pollution.

Coca-Cola Co. Packaging Units Generated in 2018



Coca-Cola disclosed it generated 225 billion units of packaging in 2018.

SOURCE: The Coca-Cola Company 2018 Business & Sustainability Report

A new key metric we are focusing on is disclosure of units sold. Previously, reducing plastic use often meant light weighting packaging. While this can be beneficial, it does not address the main environmental threat posed by plastic pollution—migration of plastic waste to land and waterways. A lighter plastic bottle or wrapper poses just as much of a threat to marine life and ecosystems as a thicker plastic bottle or wrapper and becomes harmful

plastic pollution if it escapes containment. Therefore, it is critical that the definition of plastic reduction expands to include goals to place fewer units of single-use plastic into commerce over time. This is one of several new metrics proposed in this report to measure and incentivize progress in reducing plastic pollution.

TOP PERFORMERS

The top scoring company for this pillar was Colgate-Palmolive Company, which reported on all 10 disclosure metrics. Another leader was Coca-Cola Co., which was one of three companies surveyed that reported on the total number of packaging units and plastic packaging units generated. Nestlé Waters NA received higher than average scores and was one of the few companies that disclosed its percentage of sales that use reusable packaging and percent of sales revenue dedicated to improving recycling infrastructure.

Leadership Actions

COCA-COLA CO. DISCLOSES KEY PACKAGING METRICS

In one area, Coca-Cola was the only company to publicly report beyond what was requested in our survey, disclosing total units of packaging and units per material packaging type across plastic, aluminum, refillable glass, non-refillable glass, juice boxes, pouches, and cartons (see Figure 12).[79] The company generates 320 million plastic units per day (see Figure 13). Coca-Cola Co. also provided other key disclosures, such as the amount of plastic packaging units, the amount of packaging made from post-consumer recycled content, and the amount of packaging that is reusable, recyclable, or compostable.

NESTLÉ WATERS NA DISCLOSES REUSABLES REVENUE

Nestlé Waters NA is one of only four companies surveyed that disclosed the percentage of annual revenue attributable to reusable and low- to zero-waste delivery methods.[80] It is one of two companies for which at least 15% of annual sales revenue is associated with reusable product delivery. Nestlé Waters NA was the only beverage company to report its percentage of annual sales revenue (0.02%) dedicated to support end-of-life infrastructure.

DISCLOSURE OF TOTAL PACKAGING TONNAGE

Ten of the 50 companies reviewed disclosed the total weight associated with their packaging, which is a key figure needed to measure packaging material use over time and critical for potential producer responsibility systems. These companies are summarized in Figure 11.

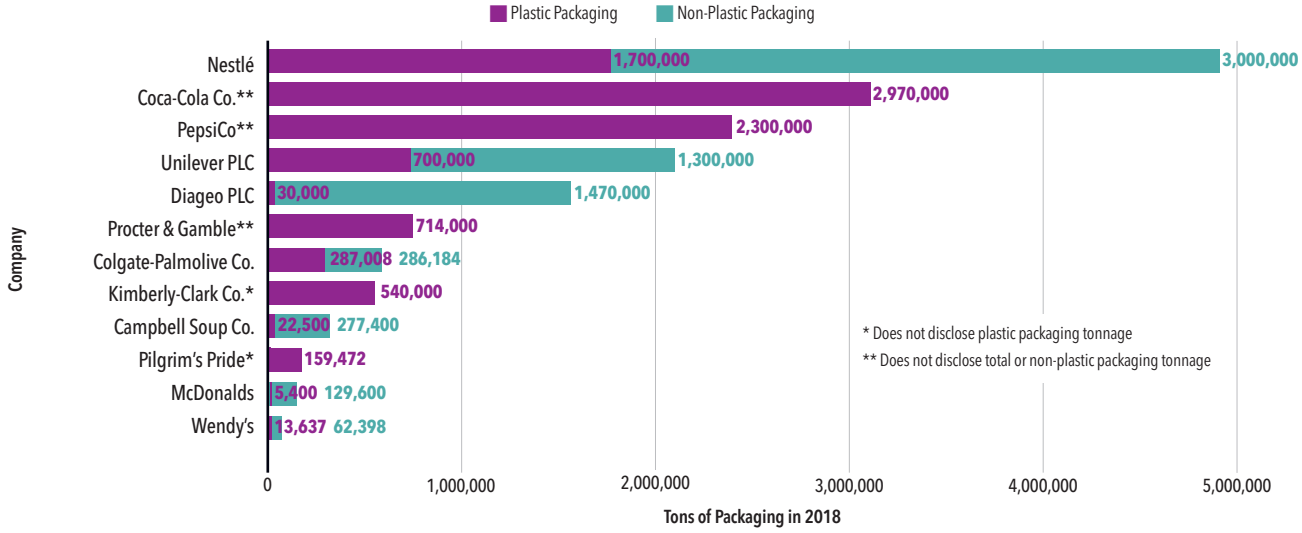
FIGURE 11: Companies Disclosing Total Packaging Tonnage

Challenges

LACK OF METRICS ON PACKAGING WEIGHT AND UNITS

The most common disclosure failure from companies was not providing the total weight, volume, or number of individual units of total packaging and plastic packaging. These metrics are essential to be able to measure whether a company is reducing its total amount of plastic packaging over time.

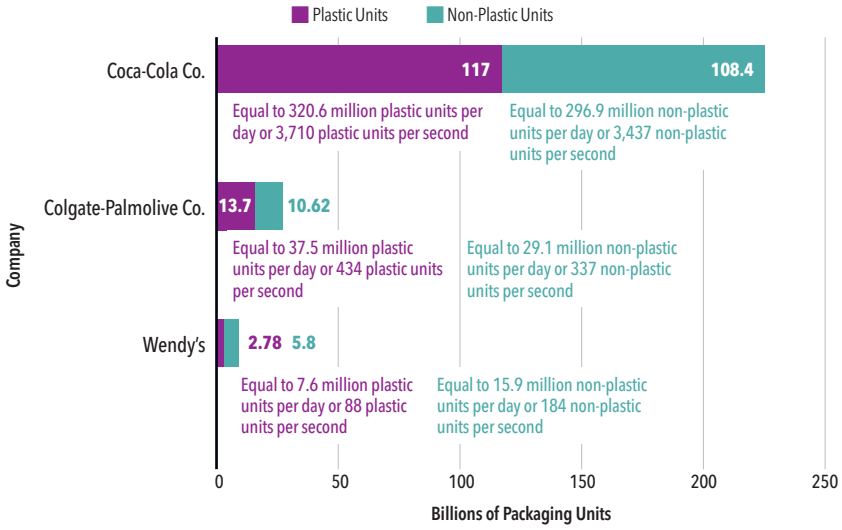
FIGURE 12: Total Tons of Packaging in 2018



COMPANY-WIDE VS. INDIVIDUAL BRAND OR PRODUCT METRICS

A further issue of concern is the tendency to disclose selected, specific initiatives or programs affecting just one product or brand that have a beneficial outcome in lieu of reporting of company-wide figures and trends. For example, a company may state it uses 75% recycled content in a particular brand package, but without context explaining what percent of total sales that product represents, or the average recycled content in all packaging, it is not possible to fully evaluate overall performance on recycled content.

FIGURE 13: Examples of Unit Sales in 2018 for Companies in Beverage, Consumer Goods, and Fast Food Sectors



Recommendations

- Companies should include goals for reductions in overall plastic use and reduction of single-use plastic units put into commerce in annual corporate social responsibility reporting, so investors and stakeholders can better assess corporate policies and practices responsive to the risks posed by plastic pollution.
- Companies need to set goals for and report the percent of company revenue associated with low- to zero-waste delivery methods. This figure is important for investors to be able to measure how much of a company's operations is positioned to deliver products via low-waste solutions. Companies should also set goals for and disclose the percentage of revenue invested to support recycling infrastructure.

- Companies should work together to standardize reporting to make it easier for stakeholders to compare performance. One option for tracking progress is the World Wildlife Fund's recently launched *ReSource: Plastic* initiative, which provides a standard methodology and platform to track and publicly report on the progress of companies' large-scale plastic waste commitments.[81]

A summary of companies that disclose tons of packaging generated in 2018 is listed in Figure 12. Nestlé has the highest tonnage of total packaging of all companies analyzed for which data was available, with 1.7 million tons of plastic packaging and three million tons of non-plastic packaging.

Only three companies—Coca-Cola Co., Colgate-Palmolive Company, and Wendy's—disclosed how many individual packaging units they generated. In 2018, Coca-Cola Co. generated a total of 225 billion packaging units, and 117 billion of these units were plastic packages. These disclosures provide valuable baseline data for future reports. A summary of unit data disclosures by those three companies follows below.

Packaging Transparency Metric Summary

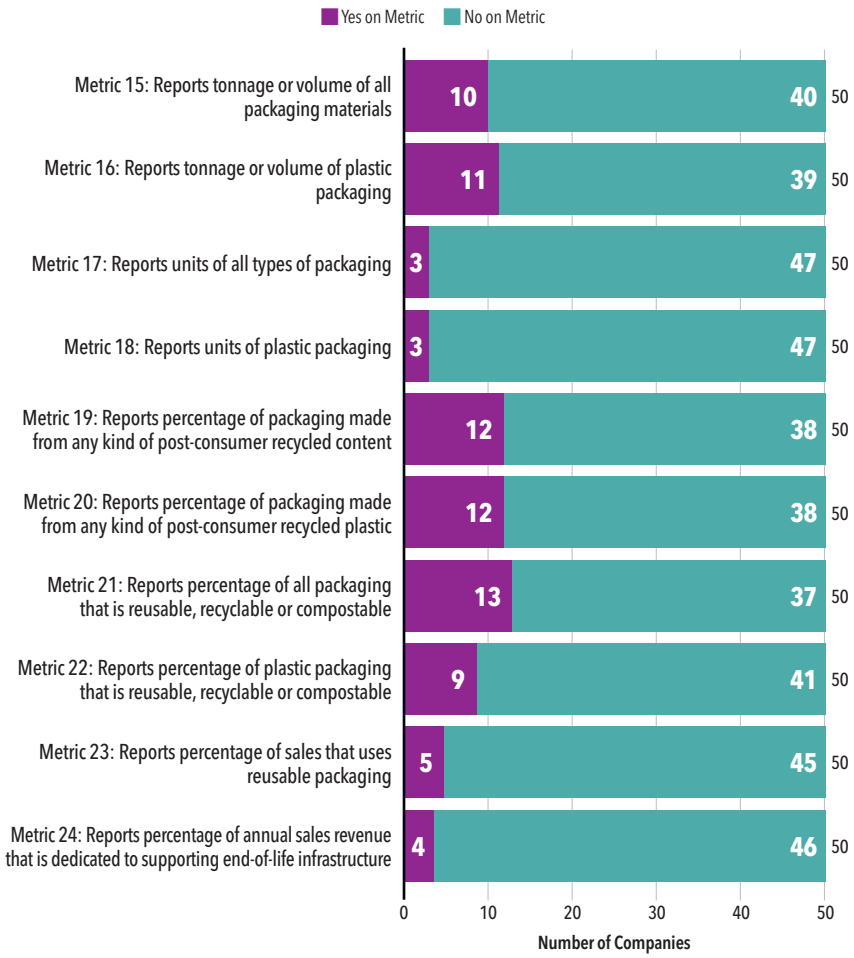
A summary of how companies performed on Packaging Data Transparency metrics follows in Figure 14.

For full details on scores attained by each company surveyed on each pillar metric, refer to our online data visualization tool.

Highlighted Results:

- Only three companies—Coca-Cola Co., Wendy's, and Colgate-Palmolive Company —reported units of company-wide packaging and plastic packaging.[82]
- The most common disclosure is the percentage of company packaging that is recyclable, reusable, or compostable.
- Only four companies reported the percentage of annual sales revenue dedicated to supporting improvement of packaging recycling and end-of-life infrastructure—Nestlé Waters NA, Campbell Soup Company, Colgate-Palmolive Company, and Target Corporation.

FIGURE 14: Pillar #4 – Packaging Transparency Grades



5 SUPPORTING RECYCLING

The metrics for evaluating company performance on Pillar 5, Supporting Recycling, are:

- Company invests 1% or more of revenue to support recycling infrastructure
- Company makes some investments to support recycling infrastructure
- Company undertakes research activities to support recyclable packaging
- Company coordinates with retailers or consumers on recycling and reducing waste
- Company has projects to improve end-of-life instructions on packaging
- Company participates in programs to support recycling or reduce packaging pollution

Supporting Recycling Overview

U.S. packaging recycling rates have flat-lined for a decade. The U.S. Environmental Protection Agency estimated U.S. plastic container recycling rates at 13% in 2010 and 13% again in 2019.[83] Our recycling infrastructure must be modernized and strengthened, and new, more dependable processing and end markets must be developed, especially for plastics.

Stakeholders are aware of the many challenges that exist in increasing recycling rates. Packaging must be better designed to be recycled, without adhesive labels or contaminants that can interfere with or cause materials to be rejected for recycling. Only half of Americans have automatic access to curbside recycling, and some who have access do not participate properly and need to be educated. All these actions need to be coordinated by groups with expertise in the complicated systems challenges involved in optimizing recycling, and far more funding is required to make it happen.

The costs involved require significantly more funding than most states or localities charged with managing recycling can afford. Producer brands that place waste materials on the market must begin taking substantial financial responsibility for such waste. *As You Sow* believes the fairest method is for companies to accept and support a system of deposit programs and producer responsibility programs where companies pay fees based on the amount of packaging materials they put on the market. To the extent that deposit and producer responsibility programs continue to meet major resistance from powerful brands, enactment at scale is unlikely to occur. In the interim, there are important voluntary investments and actions companies can take to support improved recycling.

TOP PERFORMERS

The top performers in this pillar are not individual companies but rather two industry-supported groups seeking to fix systemic problems associated with the U.S. recycling system: The Recycling Partnership and Closed Loop Partners, discussed below. In terms of positive company actions, Unilever has invested in technology and a pilot plant to test whether multilayer pouches and sachets can be safely and economically recycled although questions remain about its effectiveness.

Leadership Actions

Improving recycling rates is a complicated systems issue and best dealt with by groups qualified to evaluate and address the full range of factors that need attention. Over the past five years, several companies have taken

incremental steps toward improving recycling by funding two independent groups focused on curbside recycling: The Recycling Partnership and Closed Loop Partners. In the absence of U.S. producer responsibility laws, the best hope for improving recycling in the short term is likely the actions coordinated by these two groups using mostly corporate financial support.

THE RECYCLING PARTNERSHIP

The Recycling Partnership is an alliance of corporate interests funding projects in several cities to boost recycling rates at the local level through purchasing modernized collection carts, educating the public on the right way to recycle, building support of local and state elected officials, and improving regional coordination across the supply chain. The partnership claims it has served more than 1,400 communities with tools, data, resources, and technical support; helped place 700,000 recycling carts; reached 74 million American households; and helped companies and communities invest more than $57 million in recycling infrastructure.

The Recycling Partnership estimates that curbside systems capture just 32% of recyclable materials available for processing from U.S. homes, meaning 20 million tons of recyclables are lost to landfills annually.

Overall, curbside recycling still suffers from poor performance. The Recycling Partnership's recent *Bridge to Circularity* report analyzes and recommends integrated actions to improve packaging design, conduct system interventions, and develop policies that move toward achievement of brand recyclability and recycled content goals. The group's *State of Curbside Recycling 2020* report [84] documented the enormity of the task still ahead to improve curbside recycling, especially in light of China's export ban, which has created the most stressful time in curbside recycling's 30-year history. The Recycling Partnership estimates that curbside systems capture just 32% of recyclable materials available for processing from U.S. homes, meaning 20 million tons of recyclables are lost to landfills annually. At the same time, dramatic declines in materials value due partly to the China ban means communities are now paying more to send materials to a recycling facility than a landfill, and many programs lack critical operating funds. The Recycling Partnership recommends the following actions:

- Substantially greater support of community recycling programs with capital funding, technical assistance, and efforts to strengthen and grow local political commitment to recycling services.
- New and enhanced state and federal recycling policies.
- Continued and expanded investment in domestic material processing and end markets.
- Citizen and consumer engagement to sustain robust and appropriate recycling behavior.
- Continued innovation in the collection, sorting, and general recyclability of materials, including the building of flexibility and resiliency to add new materials into the system.
- Broader stakeholder engagement in achieving all elements of true circularity, in which the fate of all materials is not just intended to be recycled, but that they are designed for recycling, collected, and actually turned into something new.

CLOSED LOOP PARTNERS

The Closed Loop Fund was created in 2014 as a $100 million fund to finance needed improvements in curbside recycling infrastructure. The fund arose from Walmart Inc.'s convening of stakeholders who identified lack of access to capital among cities and recyclers as a root cause of lagging recycling rates. The fund has invested $58 million to date in 27 projects that strengthen collection and processing of recyclable materials. Its investment in Minneapolis-based Eureka Recycling led to a tripling of polypropylene collected curbside. Investment in AMP Robotics™, an artificial intelligence company, led to installation of 45 robots at materials recovery facilities, increasing the ability to capture valuable recyclable materials, boosting facility yield. In recent years, the original fund structure has expanded to become Closed Loop Partners, an investment firm comprising venture capital, growth equity, private equity, project finance programs, and an innovation center. The firm has raised more than $700 million in capital to support improvements in recycling, including $100 million raised since 2014, $175 million in current assets under management, and $500 million co-invested by partners in portfolio companies and projects.[85]

Closed Loop is a welcome step toward strengthening recycling infrastructure, but it needs to be recognized as just the beginning of a multi-strategy solution by brands and other stakeholders that will be necessary to increase recycling rates. Its efforts to promote chemical recycling technologies need scrutiny, considering the risks and challenges posed by these technologies, discussed below.

The work of groups like Closed Loop Partners and The Recycling Partnership is critical to solving the challenges faced by curbside recycling. We believe all consumer goods, beverage, and fast food companies should be contributing up to 1% of annual revenue to finance the needed actions cited above until adequate national finance policies are in place. Most companies do not publicly disclose total corporate investment in actions to improve recycling. This should be a standard disclosure metric going forward.

We acknowledge the following companies surveyed in this report that have financially supported the work of these two groups to improve U.S. recycling systems. Supporters of The Recycling Partnership: Coca-Cola Co., Colgate-Palmolive Company, General Mills, Inc., Heineken, Johnson & Johnson, Kellogg Company, Keurig Dr Pepper, Molson Coors Beverage Company, Nestlé, PepsiCo, Procter & Gamble, and Target Corporation. Supporters of Closed Loop Partners: Coca-Cola Co., Colgate-Palmolive Company, Johnson & Johnson, Keurig Dr Pepper, McDonald's Corp., Nestlé, Nestlé Waters NA, PepsiCo, Procter & Gamble, Starbucks, Unilever, Walmart Inc., Wendy's, and Yum! Brands.

Still, the cumulative funding of these groups represents only about 7% of what is needed to fix the U.S. recycling system, as discussed below.

UNILEVER TESTS SACHET RECYCLING TECHNOLOGY

Unilever sells health and beauty products in small, single-serve sachet packets in Asia, creating a huge pollution problem as sachets are not currently recyclable and end up littering beaches and shorelines. In 2017, Unilever unveiled what it called a groundbreaking solvent-based technology to recycle the polymers used in sachets and is testing it at a pilot plant in Indonesia. We applaud the company for investing in a potential recycling solution, but many questions remain. In 2018, the company said the facility was recycling three tons of material per day.[86] The plant is designed to recover polyethylene, which accounts for about 60% of sachet content and can be converted back into polymers used to make new sachets, according to the company. The company has not disclosed the chemical solvents used in the process or issues of toxicity. The company said in late 2019 that it had "challenges" with the costs associated with collection and system efficiency, with the process recovering only about 40% of polyethylene instead of the expected 60%.[87] The company has been funding community "waste banks," where local residents are paid to collect sachets to feed the pilot plant, but in the absence of concentrated and high volume recovery of sachets, it is unclear how the company will obtain enough material on an ongoing basis to sustain scaled operations. This project must first answer safety-related questions and make faster progress to qualify as a viable recycling solution to meet the company's 2025 recyclable packaging goal.

COMPANIES INCREASING HOW2RECYCLE® LABELED PRODUCTS

The How2Recycle® program is an effort to standardize recycling information operated by the Sustainable Packaging Coalition. How2Recycle® labels can help inform consumers about which types of packaging can be recycled, and companies are increasing use of these labels. Target Corporation will include the How2Recycle® label on all owned brand packaging by the end of 2020.[88] Walmart Inc. plans to label all food and consumable private-brand packaging with the How2Recycle® label by 2022.[89] More than two thirds of General Mills, Inc., products with large enough packages now include How2Recycle® labels.[90] However, the system, while well intended, has limits; in many areas, some kinds of packaging may not be collected by local recyclers. In these cases, the labels state that consumers must "check locally" to see if a container can be recycled, limiting the value of the label and requiring consumers to do additional research to determine if a specific packaging is recycled in their community.

Challenges

THE COST TO FIX OUR BROKEN RECYCLING SYSTEM

In its *State of Curbside Recycling 2020* report, a preliminary analysis by The Recycling Partnership estimates that the recycling system needs about $12 billion to fix elements such as expanding access to curbside recycling, providing modern collection carts, improving materials recovery facility infrastructure, reducing contamination, increasing participation, and developing new recyclables processing markets.[91] The partnership estimates that it has raised or leveraged about $98 million to date, mostly from packaging producers. Closed Loop Partners says it has raised $775 million from a combination of producers and private investors.[92] This puts known private sector funding to fix recycling at about $873 million, or about 7% of what is required to fix the system. The Recycling Partnership notes that only a handful of producers have stepped up to support these types of voluntary funding mechanisms, leaving the system needing far more revenue and likely thousands of free rider companies whose packaging is part of the plastic pollution problem. This huge 93% funding gap justifies our metric asking companies to donate or invest up to 1% of annual revenues to support projects that improve recycling infrastructure.

LITTLE PROGRESS SEEN ON MAKING FLEXIBLE PLASTIC PACKAGING RECYCLABLE

One of the biggest dilemmas for consumer brands is flexible plastic packaging, which is generally non-recyclable. In recent years, package design has shifted from rigid to flexible packaging, which has come to dominate the packaging market and is now the second most common material used for packaging after paperboard (corrugated) materials, with U.S. sales of $31 billion and global sales of $252 billion.

Flexible packaging refers to a wide range of material formats, including small sachet packets used for products like single serve shampoo and soap; larger pouch containers used for baby food, juices, and scores of food products; and an array of thin film packaging for cookies, potato chips, and similar snack foods.

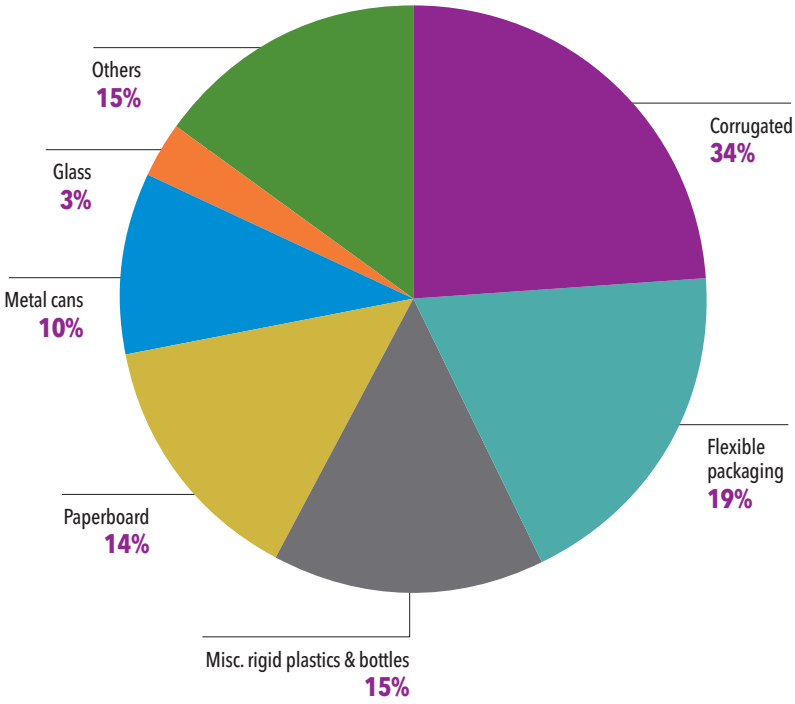
Pouches and sachets are made by fusing together several different materials; pouches are typically a multi-laminate combination of different types of plastic and sometimes a thin

Millions of flexible plastic pouches escape into the environment every year.

Photo courtesy of Algalita Marine Research and Education

layer of aluminum. Flexible packaging producers tout the material as environmentally beneficial because its production generally has a lower carbon footprint than other forms of packaging and its light weight makes it popular with consumers. But, its fundamental weakness is that it cannot be recycled using traditional mechanical recycling technology, so billions of pouches are ending up in landfills or escaping into the environment. Five years after *As You Sow* initially reported on this trend in our 2015 *Waste & Opportunity* report, sales keep growing, and the industry has not found a scalable way to recycle flexible packaging.

FIGURE 15: Market Share of Leading Packaging Materials



Flexible packaging is the second largest form of packaging after corrugated fiber.
(Source: Flexible Packaging Association)

Major brands like Unilever, PepsiCo, and Kraft Heinz Co. sell a significant percentage of products in flexible plastic. In 2015, Unilever stated that 17% of its packaging was in multi-laminates, and PepsiCo reported 15%. These companies have committed to make all their packaging recyclable by 2025, so they must develop viable recycling solutions that can be in operation by that time or switch to different materials.

Unilever and PepsiCo have taken initial steps in recent years to develop solutions. Unilever is testing the solvent-based technology discussed above. PepsiCo worked with biotechnology company Danimer Scientific to develop biodegradable film resins from the polymer PHA, made from plants instead of fossil fuels, as compostable packaging for PepsiCo's snack foods. In 2018, the company launched a pilot using PHA compostable packaging for its Tostitos chip brand. One huge limitation is that less than 2% of the U.S. population has access to the industrial compost technology needed to process the bags, so if PepsiCo used PHA-based bags nationally, most would still go to landfills.

The lack of a viable recycling solution for flexible packaging will have huge implications in 2025.

The American Chemistry Council sponsors a Materials for the Future project, which has performed trials on whether flexible packaging can be separated from other materials at materials recovery facilities and collected into bales. The American Chemistry Council maintains that it can be done. However, there is no coordinated industry effort into the much more important and difficult challenge of finding cost effective technologies that can recycle these materials. The most visible effort to collect and divert flexible plastic via curbside in recent years is not even a recycling method. The Hefty EnergyBag program allows residents in a few small cities to place

flexible packaging in a separate plastic bag and toss it into curbside recycling containers. The bags are diverted to a variety of energy-recovery technologies, including cement kilns and gasification and pyrolysis technologies, none of which constitutes recycling. Anti-incinerator group GAIA has criticized burning plastics as a "greenwashing stunt," and the National Recycling Coalition says energy recovery of the bags is not consistent with the definition of recycling and, therefore, not a recycling program.[93] The lack of a viable recycling solution for flexible packaging will have huge implications in 2025. Scores of companies that use flexible packaging have pledged it will be recyclable under the New Plastics Economy Global Commitment. If no solutions are ready, the companies will likely have to revert to alternative materials.

CHEMICAL RECYCLING

The plastic pollution crisis has ramped up pressure on consumer brands and petrochemical producers to find new ways to recycle plastics that cannot be or are not recycled. The plastics industry and some consumer brands have begun to invest in and market the concept of chemical recycling (also referred to as "advanced recycling" and "transformational technologies") as a way to recycle a variety of low-value plastics that are currently burned or landfilled. However, there are numerous economic, environmental, and policy concerns that must be addressed before chemical recycling can be viewed as a viable option for recycling plastic waste at scale.

Traditionally, most plastics recycling has been mechanical recycling, as used to recycle PET plastic soda and water bottles, which preserves the molecular structure of the polymer, crushing bottles and melting them into a granulate that can be used to form new bottles. Plastic cannot be endlessly recycled mechanically without reducing its properties and quality, and not all plastic types can be mechanically recycled. These limitations have led to promotion of a variety of existing and emerging technologies referred to as chemical recycling, which can split polymer chains back to their original monomer form, making it possible to recycle many more kinds of plastic.

There are three main types of chemical recycling: (1) thermal depolymerization and cracking, which includes pyrolysis and gasification, processes that break polymers down into oil and gas fractions; (2) chemical depolymerization, which also turns plastic back into monomers and decontaminates it; and (3) solvent-based purification, like Unilever's process discussed above, which can decontaminate plastic but not prevent eventual degradation.[94] Pyrolysis and gasification are existing technologies that are often energy intensive and have struggled to become technically or commercially successful.

A recent report by Closed Loop Partners, *Accelerating Circular Supply Chains for Plastics*, surveyed 60 companies using chemical recycling or purification processes and concluded they have a potential $120 billion market in Canada and the U.S. More than 40 of the companies reviewed are operating commercial scale plants or will be within two years, the report said. However, it noted that of the technology providers surveyed, it has taken them 17 years on average to reach growth scale, making it unlikely these processes can be developed rapidly enough to stem the ongoing tide of plastic waste.[95]

Although pyrolysis and gasification are explored to turn plastic waste back into plastic monomers, in practice, challenges in decontaminating and enriching the outputs to be used for plastic production usually favor retaining the outputs as oil and gas. Such plastic-to-fuel or waste-to-energy technologies are at a significant disadvantage on a policy level as the European Union's Waste Framework Directive bars fuels generated from waste being counted as "recycling." Similarly, the New Plastics Economy Global Commitment states that waste-to-energy and plastic-to-fuel operations cannot be considered recycling or part of a circular economy, and *As You Sow* fully concurs with that view.

Brands seem to be most interested in investing in processes that can provide recycled PET resin. Coca-Cola Co. has invested in DEMETO, a European consortium focused on chemical recycling of PET. Nestlé Waters NA and PepsiCo have supply deals with Loop Industries, a Canadian startup that can depolymerize waste PET plastic and polyester fiber into virgin-like PET resin. Coca-Cola Co. and Unilever have invested in Ioniqa Technologies, a

chemical depolymerization company that says it can convert degraded ocean plastic into food grade quality PET. It recently publicized a tiny test of 300 bottles made from 25% recovered ocean plastic.[96]

The development of chemical recycling needs to be closely monitored. To date, the industry has not been forthcoming with energy use and emissions data, and little is known about the toxicity of air emissions, solid waste, and wastewater streams. In particular, the fate of contaminants and additives, including toxic metals, is unknown. There are also concerns about potential high levels of toxic contamination in the products, which may find its way back into consumer products.

The biggest concern is that ongoing high volumes of plastic waste will be needed to feed these processes over time, which risks locking in long-term use of wasteful single-use plastics that should be phased out. This raises questions about whether investors will want to spend billions of dollars to develop processes for waste streams that may dry up as problematic plastics are phased out and more countries institute effective recycling programs.

Despite the promise of recycling a greater variety of plastics, chemical technologies face many of the same hurdles associated with low rates of mechanical recycling, such as lacking quality feedstock, screening out contaminants, procuring enough volume to run continuous, and operating profitably.

As consumers and governments press brands to phase out single-use plastics, companies do not have 10 years to ramp up scalable chemical recycling solutions, suggesting that brands should look first for reduction and reuse solutions rather than continued reliance on single-use plastics. If that is not feasible, they need to switch packaging to more mechanically recyclable alternatives, such as PET or HDPE.

FAILED COMMITMENTS –NESTLÉ WATERS NA AND PEPSICO

In light of the scores of commitments now pending by consumer brands under the New Plastics Economy Global Commitment, it is important to note that there is already more than a decade of experience with similar commitments, some of which failed badly, and constant vigilance is required to ensure companies stay on track. Here is what happened when two industry giants made bold commitments to *As You Sow* to dramatically increase bottle and can recycling.

Nestlé Waters NA: In 2008, Nestlé Waters NA committed to an industry goal that would double recycling to 60% for PET plastic bottles by 2018. Twelve years later, the current PET recycling rate is 28.9%, and the average rate over the past 10 years has been 29.6%, according to the National Association for PET Container Resources.[97] Nestlé Waters NA has offered no official response to date discussing what actions it took to try to increase PET bottle recycling. Its apparent main strategy was to promote state legislation for extended producer responsibility for packaging between 2012 and 2015 and lobby other companies to support it. It is not clear what other efforts were undertaken when that effort was not successful. *As You Sow* recently asked the company for a statement. It responded: "The hope at that time was that by stepping out and setting an ambitious goal, we could catalyze collective action from other industry players, policy makers, and NGOs. That groundswell of support, unfortunately, never materialized and, as a result, the target wasn't reached."[98] The company has pivoted away from actions to increase the recycling rate and toward boosting recycled PET content. Ironically, the continued low PET recycling rate makes acquiring sufficient recycled content difficult.

PepsiCo: In 2010, PepsiCo made an ambitious commitment to work with peers to elevate the U.S. beverage container recycling rate to 50% for plastic and glass bottles and aluminum cans by 2018. When it became apparent in 2017 that the company would not come close to meeting its goal, *As You Sow* encouraged PepsiCo to develop a revised plan for increasing recycling rates and publicly discuss what happened. In 2018, after filing a shareholder proposal with the company to nudge it along, the company quietly issued a report about its efforts to increase recycling rates.[99] PepsiCo's report did not clearly acknowledge failure to meet the goal or propose a revised effort to meet amended goals. Instead, it replaced a quantitative goal with a vague assertion to "work to increase recycling rates," a rather stunning retreat of ambition. In early 2018, the company indicated that its revised plan would consist largely of a $10 million donation to The Recycling Partnership. PepsiCo acknowledged

the complexity involved in increasing recycling rates, including packaging better designed for recycling, improved access to curbside collection, strengthened infrastructure, and more dependable end markets. However, there was scant evidence of efforts to make these things happen *at scale*.

We have applied a penalty metric to Nestlé Waters NA and PepsiCo's scores in this report due to these failures to increase recycling rates.

"RECYCLABLE," BUT NOT RECYCLED?

Keurig Dr Pepper, maker of the popular plastic K-Cup® coffee pods, spent several years planning to convert them from polystyrene to polypropylene with the aim of eventual curbside recycling of the tiny cups. The company worked with local recyclers to ensure the new pods can be processed successfully. It conducted numerous tests in municipal recycling facilities, which it says proved its pods can be recovered with existing equipment. However, it is not clear that any recyclers are actually recycling the pods in the U.S. A pending class action lawsuit accuses the company of falsely labeling its pods as recyclable despite not being recycled by any identifiable material recovery facilities.[100] The company asserts that its labeling was not misleading because it asked consumers to "check locally" about whether the pods are recyclable. Keurig Dr Pepper says it is still transitioning cups in the U.S. market to recyclable polypropylene but has completed that process in Canada and that the cups are collected curbside in British Columbia (BC). However, the suggested New Plastics Economy Global Commitment threshold to demonstrate recycling works "in practice and at scale" is a 30% post-consumer recycling rate achieved across multiple regions, collectively representing at least 400 million inhabitants. BC has a population of five million.

GREENPEACE REPORT ALLEGES MISLEADING RECYCLING CLAIMS

The issue of what is actually getting recycled was further highlighted in a recent Greenpeace report that surveyed more than 300 U.S. materials recovery facilities and concluded that many companies had placed misleading labels on their products asserting that they were widely recyclable when in fact they are not.[101] Based on its research, Greenpeace said only PET #1 and HDPE #2 plastic bottles and jugs may legitimately be labeled as widely recyclable by consumer goods companies and retailers. The study said only 31% of the U.S. population has access to #5 polypropylene, the plastic used by Keurig Dr Pepper in its K-Cup® pods, and that acceptance of a #5 polypropylene by a materials recovery facility is not proof that it will be recycled into a new product. Typically, #5 polypropylene is collected as part of a mixed plastics #3-7 bale, which is not a "market-ready" bale as required by the Association of Plastic Recyclers in its definition of "recyclable" plastic, the group said.

In a possibly related move, the How2Recycle® program operated by the Sustainable Packaging Coalition, which promotes clear recycling instruction labels on packaging, recently downgraded the language its members will use on packaging labels for polypropylene and PET non-bottle rigid containers from "Widely Recycled" to "Check Locally" based on what it said was new research that fewer Americans had access to curbside recycling of these materials.[102]

NEXTGEN CUP CHALLENGE

Starbucks and McDonald's created the NextGen cup challenge discussed in Chapter 1, involving a consortium and challenge to design a more sustainable cup that can be recycled or composted globally. Many recyclers do not take paper cups because a plastic lining requires special equipment be available at paper mills to process them. If the company can develop a cup that recyclers will accept, and curbside systems begin to accept the cups in large numbers, this effort will support higher levels of fiber recycling.[103]

Recommendations

- Far more funding is needed to fix recycling. With only about 7% of the necessary funds leveraged to date in the U.S., far more brands need to step up ways to directly support or otherwise bring much-needed capital and sustainable financing to the country's collection and processing system.
- Flexible packaging solutions need rapid investment. With less than five years to make flexible plastic recyclable by 2025 under the New Plastics Economy Global Commitment, there is no coordinated industry effort to find scalable solutions. Companies producing and using flexible plastic should move rapidly to find solutions or risk having to abandon flexibles to make good on their pledge.
- Chemical recycling needs close scrutiny. Chemical recycling is being touted as a way to radically reduce plastic waste, yet it faces many unanswered questions about its cost and safety and whether investors will spend billions of dollars needed to develop a working global infrastructure to process post-consumer flexibles.
- More producers need to work in tandem with local government. More quick-service restaurant companies need to engage with municipalities to find ways to provide curbside recycling for paper cups and to provide or sponsor a network of public recycling bins near their restaurant locations. Companies should also work more extensively with paper recyclers so that a greater variety and amount of post-consumer packaging can be included in mixed paper bales for recycling.

Supporting Recycling Metrics Summary

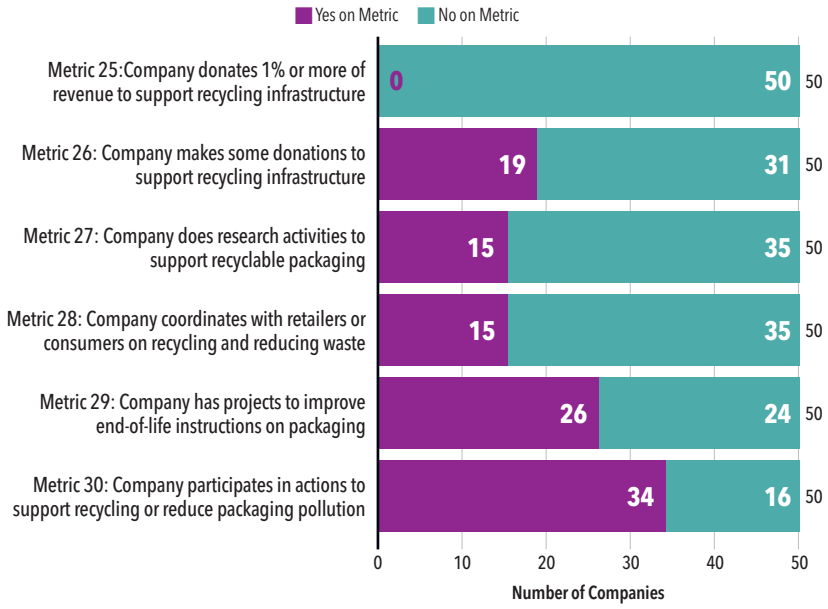
A summary of how companies performed on Supporting Recycling metrics follows in Figure 16.

For full details on scores attained by each company surveyed on each pillar metric, refer to our online data visualization tool.

Highlighted Results:

- Zero companies surveyed invest 1% or more of revenue to support recycling.
- Thirty-four of the 50 surveyed companies, or 68%, engage in some type of substantial activity to support packaging recyclability or increased recycling.
- Nineteen companies say they have made donations to support recycling infrastructure.

FIGURE 16: Pillar #5 – Supporting Recycling Grades



6 PRODUCER RESPONSIBILITY

The metrics for evaluating company performance on Pillar 6, Producer Responsibility, are:

- Invests in solutions to capture at least as much waste as they produce
- Supports extended producer responsibility (EPR) schemes
- Set goal for products to be properly recycled at the end-of-life (EOL)
- Company statement recognizing that packaging waste is a company's responsibility
- Company works with stakeholders for at least shared responsibility solutions

Producer Responsibility Topic Overview

U.S. packaging recycling rates have flat-lined for a decade. The U.S. Environmental Protection Agency estimated U.S. plastic container recycling rates at 13% in 2010 and 13% again in 2019.

As discussed at length in Chapter 5, our recycling infrastructure must be modernized and strengthened, and new, more dependable processing end markets, especially for plastics, are badly needed. This all requires significantly more funding than most states or localities, which are charged with financing many of these actions, can afford.

As You Sow believes that the companies that place problematic packaging into commerce must take predominant financial responsibility for addressing this packaging at end-of-life. Shifting financial responsibility for collecting and recycling post-consumer packaging in the U.S. from taxpayers to producers through a policy known as extended producer responsibility (EPR) will incentivize producers to reduce the amount of problematic packaging they create, support substantially increasing recycling rates, provide much needed revenue to improve efficiency of recycling systems, reduce carbon footprint and energy use, and reclaim billions of dollars of embedded value now buried in landfills.

Producer responsibility systems will greatly reduce the amount of plastic waste entering our oceans.

Open source photo

Even before the emergence of the plastic pollution crisis, there were two proven ways to increase packaging recycling. In the 10 U.S states with container deposit laws for bottles and cans, the average recycling rate ranges from 66% to 96%, whereas for the 39 states without such legislation, the rate is 30%.[104] EPR laws, which cover many more kinds of packaging than deposit laws, shift financial responsibility for collection and recycling of packaging from taxpayers to the producer brands that create the waste. In Europe, the plastic packaging recycling rate under mandated producer responsibility programs is 42%,[105] compared to 13% in the U.S. where no producer responsibility laws for packaging are in effect.[106]

Many beverage companies have fought deposit laws, and many consumer goods companies opposed EPR as unfair taxes, using their lobbying clout to defeat legislative efforts. As a result, while there are effective producer responsibility laws in the U.S. for collecting and processing end-of-life electronics, paint, medical waste, and other post-consumer materials, there are no EPR laws yet for recycling packaging.[107] In the last two years, however, pressure has risen dramatically on brands that market goods in single-use packaging to take more responsibility for the damage plastic causes to marine life in oceans and on land.

The plastic pollution crisis may finally force companies to take responsibility for the packaging they place into commerce in the U.S. A bill pending in the California legislature that would require elimination of 75% of single-use containers by 2030, likely using a producer responsibility funding mechanism, is expected to be enacted later this year. Yet, even if the California bill is successful, a state-by-state approach means progress in securing much needed funding would be slow and piecemeal. A federal approach would result in a more rapid, coordinated action. Federal legislation introduced early in 2020 by Rep. Alan Lowenthal (D-Ca.) and Sen. Tom Udall (D-NM), aimed at curbing single-use plastics by using both deposit and EPR schemes, has elevated the conversation to the national level.[108]

Vocal proponents of EPR or deposit laws are still rare. In response to our survey, however, four brand giants—Coca-Cola Co., Nestlé, Nestlé Waters NA, and Unilever—have expressed support for some forms of deposit or producer responsibility legislation. Figure 17 summarizes those responses. While Nestlé's and Unilever's support had been previously known, Coca-Cola Co.'s supportive position for deposits is a new development. PepsiCo and Keurig Dr Pepper expressed neutral positions rather than outright opposition for some options.

Leadership Actions

UNILEVER SUPPORTS EXTENDED PRODUCER RESPONSIBILITY

Unilever is one of the few companies to vocally support EPR laws. It has publicly challenged peers to "engage in policy discussions with governments on the need for improvements to waste management infrastructure, including implementation of EPR schemes." Unilever has also pledged to finance and track its commitment to capture more plastic waste than it produces. CEO Alan Jope has stated: "Our plastic is our responsibility and so we are committed to collecting back more than we sell, as part of our drive towards a circular economy".[109] In response to our survey, the company added: "We support the implementation of comprehensive waste management legislation to build a more effective and efficient waste infrastructure including: promoting integrated waste management solutions, stretching national recycling targets, at-source separation and collection systems for recyclables, incentives to increase the use of recycled content and reusable packaging, voluntary industry-led and funded programs and mechanisms to create a level playing field. We are supportive of EPR regulations which reflect the unique waste management requirements of the market." Unilever has pledged to help collect more packaging than it sells by 2025.

"Our plastic is our responsibility and so we are committed to collecting back more than we sell, as part of our drive towards a circular economy."

– Alan Jope, Unilever CEO

IN NOTABLE REVERSAL, COCA-COLA CO. NOW SUPPORTS SOME CONTAINER DEPOSIT LAWS

Coca-Cola Co., which has strongly opposed enactment of new state container deposit laws for decades, may finally be changing its tune. In response to our survey, the company said it would oppose a deposit system operated by the government but would support a system operated either by producers or a consortium of stakeholders including government, businesses, NGOs, and other stakeholders. Coca-Cola Co. also stated: "We do support these programs where the producer companies have some control over the reverse logistics supply chain to drive efficiency, cost control and circularity to the end market to ensure that we can collect more of our bottles and cans so they can be recycled and reused to make new bottles/cans." The change was not wholly unexpected as the company endorsed container deposit laws in Scotland and the UK in recent years when it became evident they had enough political support to be enacted. Coca-Cola Co. has also promised to help collect and recycle a bottle or can for each one it sells by 2030.

NESTLÉ WATERS NA SUPPORTS EPR AND DEPOSIT LAWS

Since 2012, Nestlé Waters NA has endorsed producer responsibility packaging programs in the U.S. Under former CEO Kim Jeffery, the company spent two years reaching out to peers and urging them to support such programs. While it struggled to get major companies to endorse producer responsibility publicly, the important issues it raised with companies about the weaknesses of the recycling system and the need to address them helped lead to the creation of the Closed Loop Fund in 2014. Companies unwilling to support laws were, however, willing to contribute to a $100 million fund to begin to strengthen recycling infrastructure. These events were discussed in detail in our 2015 report. Nestlé Waters NA endorsed two of the three EPR options on our survey and a third with a contingency (see Figure 17). The company commented, "In designing EPR programs, it will be important to understand how such a program would interact with existing bottle redemption programs if existing within the subject jurisdiction." Nestlé Waters NA also supports deposit laws and issued a detailed policy statement on its position on such programs, which is available on its website.[110]

Challenges

FEW COMPANIES ARE LEADING ON EXTENDED PRODUCER RESPONSIBILITY

Despite the positive examples cited above, overall, few companies acknowledge their responsibility for the packaging they place into commerce, especially plastic packaging and its harm to Earth's ecosystems. Few companies have taken a position supporting producer responsibility or container deposit programs, which are key to financing needed reforms to recycling systems. More companies received failing grades on this metric than any other in this report.

PEPSICO REMAINS OPPOSED TO OR NEUTRAL ON DEPOSITS

With Nestlé Waters NA and Coca-Cola Co. now stating acceptance of container deposit laws, beverage giant PepsiCo becomes the largest company opposing or not supporting both deposit and producer responsibility laws. PepsiCo is opposed to a consumer deposit system or fees managed by the government and to mandated fees on single-use or material-specific items, such as plastic bag fees. PepsiCo states it is neutral on a consumer deposit system managed by producers or a consortium of stakeholders and on fees managed by a consortium of stakeholders.[111]

ACTIONS SPEAK LOUDER THAN WORDS

Despite the encouraging endorsements of producer responsibility and deposit programs discussed above, the reality is sometimes different. Brand companies that have expressed support for EPR or deposit laws in broad policy statements sometimes opposed such legislation due to disagreement with specific provisions of a bill. The brand endorsements of producer responsibility laws must be taken with a measure of caution. What matters in the end is whether these brands are willing to bite the bullet and support programs even when they cannot reach a compromise on all specific components on which they take issue. Producer responsibility policies are proven to support the greater good by dramatically increasing recycling in a reasonable time frame and distributing the financial burden fairly.

A summary of company positions on consumer deposit systems and extended producer responsibility solutions is provided below.

FIGURE 17: Brand Positions on Container Deposit and Extended Producer Responsibility Systems to Boost Post Consumer Packaging Recycling

SYSTEM	SUPPORT	NEUTRAL	OPPOSE
Consumer deposit system managed by government	Nestlé Waters NA	Unilever PLC	Keurig Dr Pepper, Coca-Cola Co., PepsiCo
Consumer deposit system managed by producer companies	Coca-Cola Co., Nestlé Waters NA	Keurig Dr Pepper, PepsiCo, Unilever PLC	
Consumer deposit system managed by a consortium of stakeholders (producers, government, NGOs)	Coca-Cola Co., Nestlé Waters NA	Keurig Dr Pepper, PepsiCo, Unilever PLC	
Extended Producer Responsibility (EPR) fees managed by government	Nestlé*, Nestlé Waters NA**	Unilever PLC	Keurig Dr Pepper, PepsiCo, Coca-Cola Co.
Extended Producer Responsibility (EPR) fees managed by a consortium of stakeholders (producers, government, NGOs)	Nestlé*, Nestlé Waters NA, Coca-Cola Co., Unilever PLC	Keurig Dr Pepper, PepsiCo	
Mandated fees on single-use or material-specific Oppose items, such as plastic bag fees	Nestlé*, Nestlé Waters NA, Coca-Cola Co., Unilever PLC		Keurig Dr Pepper, PepsiCo

* Based on interpretation of public statements, not survey results

** Nestlé Waters NA,a subsidiary of Nestlé, commented on this option: *"Support for such a program option would be contingent on safeguards that direct EPR fees to support program administration and recycling-related infrastructure investment versus unrelated expenditures."*

Recommendations

- Corporate responsibility managers need to prioritize obtaining buy-in from senior management for deposit or other programs, as appropriate, and go beyond simple endorsement and aggressively promote such legislation as part of their legislative lobbying agenda.
- More companies need to follow Unilever's lead and challenge peers to step forward and publicly support a national approach to producer responsibility laws and deposit programs. Having uniform national programs could allow leapfrogging progress on recycling and reduce the time needed to increase recycling rates by many years.

Producer Responsibility Metrics Summary

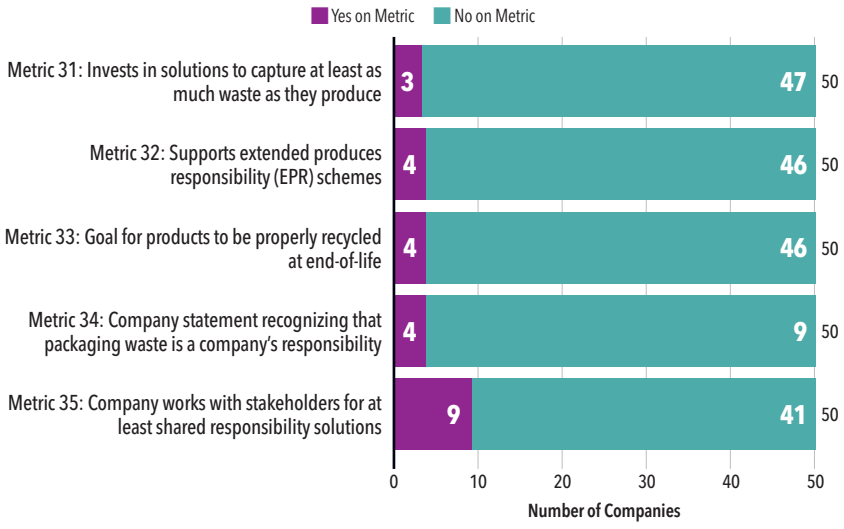
A summary of how companies performed on Producer Responsibility metrics follows in Figure 18.

For full details on scores attained by each company surveyed on each pillar metric, refer to our online data visualization tool.

Highlighted Results:

- On average, companies scored worst on the issue of supporting deposit or EPR laws to improve collection and recycling of post-consumer packaging generated by their products.
- Only three companies—Unilever, Nestlé Waters NA, and Coca-Cola Co.—invest to capture as much waste as they produce.
- Only four out of 50 companies—Unilever, Nestlé, Nestlé Water NA, and Coca-Cola Co.—support an EPR scheme.
- Four companies surveyed recognize that packaging waste is a company's responsibility or have shown willingness to work with stakeholders to share responsibility for solutions—Coca-Cola Co., Nestlé Waters NA, Nestlé, and Unilever.

FIGURE 18: Pillar #6 – Producer Resonsibility Grades



CONCLUSION

The plastic pollution crisis that emerged in the last three years shifted *As You Sow's* primary focus from actions to boost lagging U.S. recycling rates for a variety of packaging types including glass, aluminum, paper, and plastic to a primary focus on plastic packaging and the examination of simultaneous strategies that need to be implemented by companies to bring plastic pollution under control.

These strategies include actions to reduce overall use of single-use plastic, product redesign for expanded utilization of reusable and refillable alternatives, greatly increased use of recycled content, expanded disclosure of packaging types created, creation of financial support for both voluntary and mandated actions to repair an outmoded U.S. recycling system, and prepare recycling systems to better process a new generation of packaging materials.

Measuring leadership by companies that received an A or B grade in this study, the most progress was evident in packaging design for recyclability goals, followed by commitments to recycled content, and actions to support recycling, with less leadership evident in reusable packaging design, transparency, and producer responsibility.

Out of the 50 companies researched, no companies earned an A; only one company, Unilever, received a B level grade, a B-; 12 companies received C grades, 22 received D grades, and 15 received F grades. The high number of poor and failing grades reflects the enormous amount of basic goal setting, strategy, and planning that must still be developed by medium to large size companies to effectively address plastic pollution.

All the companies surveyed have substantial work to do to achieve the metrics presented in the six pillars that form the basis of this report. However, we identified six laggards who are far behind some peers and, given their size, should be investing far greater resources on plastic packaging reduction, packaging redesign, commitments to recycled content, and support for recycling. The six companies and the main factors in their low grades are listed in Figure 19.

FIGURE 19 – Largest Companies by Revenue That Received a D or F Grade

Walmart Inc. Revenue: $500 billion Grade: D+	Lacks goal for reduction in plastic packaging use or cuts in use of virgin plastic packaging. No active pilot projects on reusable packaging. No plastic use data disclosure. No support for producer responsibility.
Kroger Company Revenue: $121 billion Grade: D	Lacks commitment to make all packaging reusable, recyclable, or compostable. No plastic use data disclosure. No support for producer responsibility.
PepsiCo Revenue: $64 billion Grade: D+	No goal for overall reduction in plastic packaging. No goal to increase company-wide reusables. Does not report units of packaging. Does not support extended producer responsibility. Failed eight-year commitment to increase national container recycling rate.
Tyson Foods, Inc. Revenue: $41 billion Grade: F	Lacks commitment to make all packaging reusable, recyclable, or compostable. No goal for cuts in total plastic packaging or in use of virgin plastic packaging. No commitments on reusable packaging or recycled content. Minimal data disclosure. No support for producer responsibility.
Kraft Heinz Co. Revenue: $26 billion Grade: D–	No goal for cuts in overall plastic packaging use or in use of virgin plastic packaging. No goals on reusable packaging. No goals on recycled content. No plastic use data disclosure. No support for producer responsibility.
Mondelēz International Revenue: $25 billion Grade: D	No goal for cuts in overall plastic packaging use or in use of virgin plastic packaging. No goals on reusable packaging. No plastic recycled content goals. No plastic use data disclosure. No support for recycling or producer responsibility.

Key Takeaways by Pillar

PACKAGING DESIGN

One of the most hopeful indicators of corporate progress and leadership overall has been the ability of the New Plastics Economy Global Commitment initiative to gather solid commitments from more than 200 companies to move toward a circular economy for packaging. Companies have pledged to redesign packaging to make it reusable, recyclable, or compostable and phase out problematic plastics. The Global Commitment features a rigorous definition of "recyclable": materials must be actively recycled in practice and at scale, which will be a high but necessary bar for companies to meet in the next five years. To achieve it, some companies may need to abandon modern, technologically advanced materials like flexible pouches and sachets and return to paper, glass, aluminum, and PET or HDPE plastic, which can be readily mechanically recycled.

Research now underway by consumer goods giants Unilever and Nestlé to design packaging with less plastic, and sometimes with less or no packaging at all, has the potential to spark a new generation of sustainable and circular packaging. If done properly, it will keep materials in perpetual motion and reduce the level of extraction needed for dwindling virgin raw materials.

REUSABLE PACKAGING

Reusables startups Loop and Algramo show promise in marketing reusable delivery systems to low-, middle-, and high-end consumers in the key grocery and retail sectors. With in-store versions of Loop set to start up later this year, there should soon be evidence as to whether a critical mass of consumers will embrace reusable delivery systems for grocery and drug store shopping. 23 of the companies surveyed indicated involvement in small-scale actions or pilots that need to be converted rapidly to scale. See Appendix C for details.

Pressure generated by socially conscious brand customers as well as activists is forcing companies like Starbucks to go back to the drawing board and reconsider a bold but failed promise to serve at least a quarter of its drinks in disposables. Starbucks' patrons must be willing to give up some convenience to help build a circular economy for beverage containers.

RECYCLED CONTENT

For many years, supposedly socially conscious companies have used price parity as a convenient excuse to avoid purchasing recycled content. With virgin materials usually cheaper than recycled, companies generally choose virgin, even though the virgin market "price" does not factor in billions of dollars of environmental damages that virgin materials might have externalized onto society. Kudos to Nestlé for agreeing to devote $1.6 billion to pay a premium for recycled materials to help develop this market. Its willingness to pay a premium price signals recognition by the company that the environmental impacts of plastic pollution, or perhaps at least public pressure, can trump traditional lowest cost considerations. Without far more of these kinds of investments, it is extremely likely that brands will fall well short of their public goals.

The need to make good on big recycled content commitments by large brands may end up being the factor that finally fixes our outdated U.S. recycling system. These commitments can motivate companies to bite the bullet, write large checks, and embrace national deposit and/or EPR laws, or some hybrid, as the only viable ways to modernize the U.S. recycling system, so that system can rev up rapidly and deliver the volume of recyclables the brands need.

PACKAGING TRANSPARENCY

What gets publicly disclosed and measured gets managed. To help demonstrate to concerned customers and stakeholders that it is taking plastic pollution seriously, brands need to disclose a variety of new metrics in annual

social responsibility reports. These metrics should include annual plastic packaging use by weight or volume, unit sales, and goals for reductions in overall plastic use and reduction of single-use plastic units put into commerce.

SUPPORTING RECYCLING

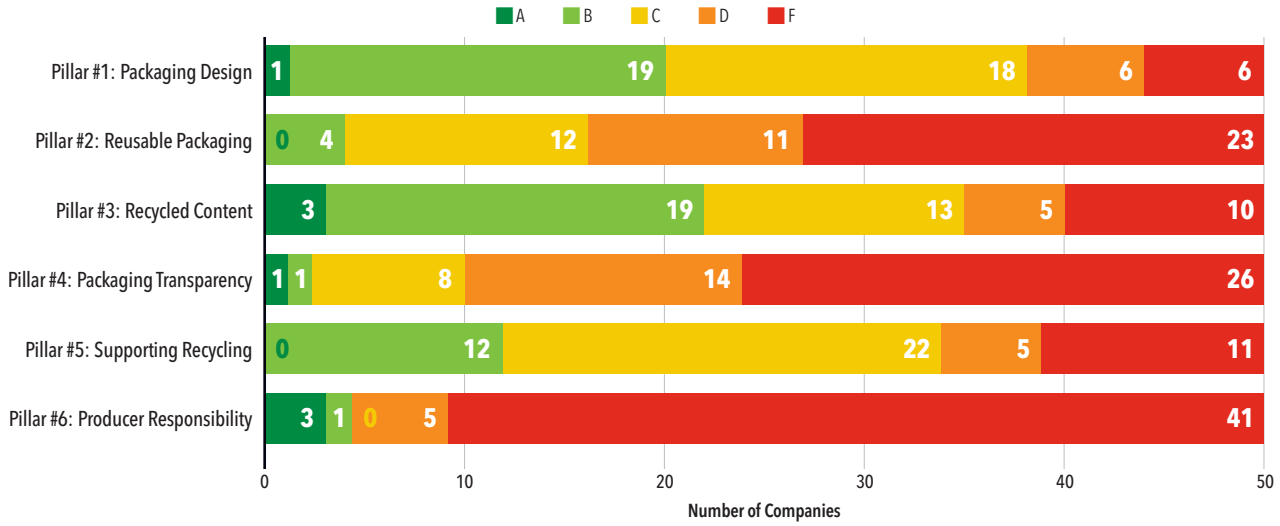
Curbside recycling isn't as well established in the U.S. as many believe. A new study by The Recycling Partnership estimates that curbside systems capture just 32% of recyclable materials available for processing from U.S. homes. As a result, 20 million tons of recyclables worth billions of dollars are lost to landfills annually. The group estimates it will take $12 billion to fix the system. Back in 2012, *As You Sow* estimated that recyclables worth $11 billion were being landfilled every year instead of captured by the recycling system.[112] This should be a wakeup call to every stakeholder who purports to care about stemming waste—be it plastic, paper, metal, or glass. The current flawed system is hemorrhaging valuable materials and putting undue stress on ecosystems both through sourcing impacts and where the pollution ends up. Our landfills are piled high with aluminum cans that have a huge carbon profile and plastic bottles for which the beverage, textile, and carpet industries are willing to compete. A one-time infusion of $12 billion is a lot to invest, but the investment could likely pay for itself in just a year or two.

PRODUCER RESPONSIBILITY

Eventually, it all comes down to who is going to pay. U.S. recycling rates have languished for a decade because: (a) fixing our inefficient system of dealing with solid waste was not a priority, even for national environmental groups; (b) cities and towns that manage solid waste at the local level did not have the money to finance improvements; and (c) beverage brands throttled efforts to expand deposit laws and grocery manufacturers throttled efforts to enact producer responsibility laws for packaging. The plastic pollution crisis and the collapse of much of the recycling market via China's import ban seems to be gradually changing those dynamics. California and Maine may be close to enacting EPR for packaging laws. Beverage giant Coca-Cola Co. is softening decades of opposition to deposit laws. Systemic change to fix recycling seems closer to becoming a reality, if not quite yet at hand.

A summary of the number of companies that received A grades through F grades per each pillar follows below.

FIGURE 20: Number of Companies Receiving the Grade



KEY DEFINITIONS

- **Circular Economy:** An economic system aimed at eliminating waste by designing out waste and pollution, keeping products and materials in perpetual use, and regenerating natural systems.
- **Deposit Return Schemes:** Used to encourage consumers to return packaging for reuse or recycling through provision of a financial incentive. A deposit cost is added to the price of products, with the deposit redeemable when consumers return the empty packaging to a designated collection facility.
- **Extended Producer Responsibility:** A policy approach under which producers are required to take financial and/or physical responsibility for collection and/or recycling, composting, or other treatment or disposal of products after use by consumers.
- **Recycled Content:** Recycled material sourced as feedstock for new packaging. There are different types of recycled content. Pre-consumer recycled material includes scrap and unused materials in the production and distribution chain before it reaches consumers. Post-consumer recycled material is generated after consumer use.
- **Renewable Content:** Composed of biomass from a living source that can be continually replenished. Renewable materials should come from sources that are replenished at a rate equal to or greater than the rate of depletion.
- **Reusable packaging:** Packaging designed to be refilled or reused multiple times. Reusable packaging is a key low- to zero-waste delivery method.
- **Sustainable Packaging:** Sustainable packaging is designed from safe, renewable materials using high levels of recycled content, and is either reusable, recyclable or compostable, and is used where adequate post-consumer processing systems are in place.
- **Tonnage of Packaging:** The total weights associated with a company's packaging.
- **Units of Packaging:** The number of individual packages distributed, which can be for all types of packaging, or for specific types of packaging, like plastic packaging.

APPENDIX A: COMPANY GRADES BY PILLAR

For a full list of company grades on specific metrics, refer to the online data visualization tool.

2020 WASTE AND OPPORTUNITY: COMPANY SCORES

COMPANY	OVERALL GRADE	PILLAR #1: PACKAGING DESIGN	PILLAR #2: REUSABLE PACKAGING	PILLAR #3: RECYCLED CONTENT	PILLAR #4: PACKAGING TRANSPARENCY	PILLAR #5: SUPPORTING RECYCLING	PILLAR #6: PRODUCER RESPONSIBILITY
Unilever PLC	B-	A	C	B	C-	B	A
Nestlé Waters NA*	C+	B-	B	A	C+	B	A
Nestlé	C+	B-	C	B	C	B	B
Colgate-Palmolive Co.	C+	B-	C	A	A	B	F
Coca-Cola Co.*	C+	B-	B	B	B	B-	A
Procter & Gamble	C	B-	D	A	D+	B-	D
Diageo PLC	C	B	C	B	C	C-	D
Keurig Dr Pepper	C	B-	C	B-	D+	B-	D
Johnson & Johnson	C-	B-	C	B	D	B-	F
McDonalds	C-	C	C	B-	D	B	F
Clorox Co.	C-	B-	C	B	D	C	F
Starbucks	C-	C	B	C	C-	C	F
Anheuser-Busch InBev	C-	C	B	B-	D	C-	F
Target Corp.	D+	B-	D	B	D-	B-	F
Kellogg Co.	D+	B-	C	B-	D-	C	F
PepsiCo*	D+	B-	C	B	C-	B	F
Walmart Inc.	D+	B-	D	B	F	B-	F
Campbell Soup Co.	D+	B-	F	B	C	C-	F
Kimberly-Clark Co.	D+	C	D	C	D	C	D
Wendy's	D+	C	F	B-	C	C	F
General Mills	D	B-	F	C	D+	C-	F
Tim Hortons	D	C	C	C	F	C-	F
Heineken Co.	D	C	F	B-	F	C	D
Kroger Co.	D	B-	D	C	F	C-	F
Dunkin' Brands	D	C	D	C	D-	C-	F

COMPANY	OVERALL GRADE	PILLAR #1: PACKAGING DESIGN	PILLAR #2: REUSABLE PACKAGING	PILLAR #3: RECYCLED CONTENT	PILLAR #4: PACKAGING TRANSPARENCY	PILLAR #5: SUPPORTING RECYCLING	PILLAR #6: PRODUCER RESPONSIBILITY
Mondelēz International	D	B-	D	B-	F	D	F
Burger King	D	C	C	C	F	D	F
KFC	D	C	D	C	F	C-	F
Molson Coors Beverage Co.	D	B-	F	C	F	C-	F
Monster Beverage Corp.	D	C	D	D	D-	C-	F
Costco	D-	C	F	B-	F	D	F
Chipotle Mexican Grill, Inc.	D-	C	D	B-	F	F	F
Kraft Heinz Co.	D-	B-	F	D	F	C-	F
Pizza Hut	D-	D	F	C	F	C-	F
Taco Bell	D-	D	F	C	F	C-	F
Dean Foods	F	D	F	C	F	D	F
Hershey's Co.	F	C	F	C	F	F	F
Conagra Brands Inc.	F	C	F	F	F	C-	F
Whole Foods Market	F	D	F	D	F	C-	F
Pilgrim's Pride Corp.	F	C	F	F	D	F	F
Hormel Foods	F	C	F	F	F	F	F
Papa John's	F	F	F	D	F	D	F
Smithfield Foods, Inc.	F	C	F	F	F	F	F
Tyson Foods, Inc.	F	D	F	F	D-	F	F
J.M. Smucker Co.	F	F	F	F	F	C-	F
Boston Beer Co.	F	F	D	F	F	F	F
United Natural Foods	F	D	F	F	F	F	F
Domino's Pizza Inc.	F	F	F	D	F	F	F
Jack in the Box	F	F	F	F	F	F	F
National Beverage	F	F	F	F	F	F	F

* Failed major sustainable packaging commitment. Score lowered ½ a letter grade or 0.5 GPA points.

APPENDIX B: GRADE METHODOLOGY

The overall grade is the average of all the pillars. The grading criteria of each pillar are:

PILLAR #1: PACKAGING DESIGN

METRIC 1: Goal to make company-wide reductions in plastic packaging or all packaging materials

METRIC 2: Goal to reduce company-wide virgin plastic use in packaging

METRIC 3: Goal to design packaging to be 100% recyclable, compostable, or reusable

METRIC 4: Actions to reduce packaging materials or increase packaging recyclability

METRIC 5: Broad statement to reduce packaging waste or increase packaging recyclability

GRADING METHODOLOGY

A: Yes on any 5 metrics (Metrics #1 - #5)
B: Yes on any 4 metrics (Metrics #1 - #5)
B-: Yes on any 3 metrics (Metrics #1 - #5)
C: Yes on any 2 metrics (Metrics #1 - #5)
D: Yes on any 1 metric (Metrics #1 - #5)
F: No on all pillar metrics

PILLAR #2: REUSABLE PACKAGING

METRIC 6: Company generates 15% or more of annual revenue with reusable packaging products

METRIC 7: Goal to increase company-wide reusable packaging delivery methods

METRIC 8: Actions or pilot programs to utilize reusable packaging

METRIC 9: Company has broad statement to support reusable packaging actions

GRADING METHODOLOGY

A: Yes on any 4 metrics (Metrics #6 - #9)
B: Yes on any 3 metrics (Metrics #6 - #9)
C: Yes on any 2 metrics (Metrics #6 - #9)
D: Yes on any 1 metric (Metrics #6 - #9)
F: No on all pillar metrics

PILLAR #3: RECYCLED CONTENT

METRIC 10: Company currently uses 5.0% or more of recycled content in company-wide plastic packaging

METRIC 11: Goals to use recycled content in company-wide plastic packaging

METRIC 12: Use of recycled content in some types of plastic packaging

METRIC 13: Actions to source fiber from recycled or responsible sources

METRIC 14: Statement or actions to increased recycled content

GRADING METHODOLOGY

A: Yes on any 5 metrics (Metrics #10- #14)
B: Yes on any 4 metrics (Metrics #10- #14)
B-: Yes on any 3 metrics (Metrics #10- #14)
C: Yes on any 2 metrics (Metrics #10- #14)
D: Yes on any 1 metric (Metrics #10- #14)
F: No on all pillar metrics

PILLAR #4: PACKAGING TRANSPARENCY

METRIC 15: Reports tonnage or volume of all packaging materials

METRIC 16: Reports tonnage or volume of plastic packaging

METRIC 17: Reports units of all types of packaging

METRIC 18: Reports units of plastic packaging

METRIC 19: Reports percentage of packaging made from any kind of post-consumer recycled content

METRIC 20: Reports percentage of packaging made from post-consumer recycled plastic

METRIC 21: Reports percentage of all packaging that is reusable, recyclable or compostable

METRIC 22: Reports percentage of plastic packaging that is reusable, recyclable or compostable

METRIC 23: Reports percentage of sales that uses reusable packaging

METRIC 24: Reports percentage of annual sales revenue that is dedicated to supporting end-of-life infrastructure

GRADING METHODOLOGY

A: Yes on all 10 metrics (Metrics #15 - #24)
B+: Yes on any 9 metrics (Metrics #15 - #24)
B: Yes on any 8 metrics (Metrics #15 - #24)
B-: Yes on any 7 metrics (Metrics #15 - #24)
C+: Yes on any 6 metrics (Metrics #15 - #24)
C: Yes on any 5 metrics (Metrics #15 - #24)
C-: Yes on any 4 metrics (Metrics #15 - #24)
D+: Yes on any 3 metrics (Metrics #15 - #24)
D: Yes on any 2 metrics (Metrics #15 - #24)
D-: Yes on any 1 metric (Metrics #15 - #24)
F: No on all pillar metrics

PILLAR #5: SUPPORTING RECYCLING

METRIC 25: Company donates 1% or more of revenue to support recycling infrastructure

METRIC 26: Company makes some donations to support recycling infrastructure

METRIC 27: Company does research activities to support recyclable packaging

METRIC 28: Company coordinates with retailers or consumers on recycling and reducing waste

METRIC 29: Company has projects to improve end-of-life instructions on packaging

METRIC 30: Company participates in actions to support recycling or reduce packaging pollution

GRADING METHODOLOGY

A: Yes on any 6 metrics (Metrics #25 - #30)
B: Yes on any 5 metrics (Metrics #25 - #30)
B-: Yes on any 4 metrics (Metrics #25 - #30)
C: Yes on any 3 metrics (Metrics #25 - #30)
C-: Yes on any 2 metrics (Metrics #25 - #30)
D: Yes on any 1 metric (Metrics #25 - #30)
F: No on all pillar metrics

PILLAR #6: PRODUCER RESPONSIBILITY

METRIC 31: Invests in solutions to capture at least as much waste as they produce

METRIC 32: Supports extended producer responsibility (EPR) schemes

METRIC 33: Goal for products to be properly recycled at the end-of-life

METRIC 34: Company statement recognizing that packaging waste is a company's responsibility

METRIC 35: Company works with stakeholders for at least shared responsibility solutions

GRADING METHODOLOGY

A: Yes on any 5 metrics (Metrics #31 - #35)
B: Yes on any 4 metrics (Metrics #31 - #35)
B-: Yes on any 3 metrics (Metrics #31 - #35)
C: Yes on any 2 metrics (Metrics #31 - #35)
D: Yes on any 1 metric (Metrics #31 - #35)
F: No on all pillar metrics

EXTRA MEASURE: FAILED SUSTAINABLE PACKAGING COMMITMENT:

- If a company has failed a major sustainable packaging commitment, their score will be lowered ½ a letter grade, or 0.5 GPA points. See Appendix A for companies receiving the penalty.

APPENDIX C: REUSABLES PROGRAMS, POLICIES, AND PILOT PROJECTS

COMPANY	REUSABLE PILOT PROGRAMS
Anheuser-Busch InBev	In 2018, 43.5% of the company's packaging volume used returnable packaging. One program near Mexico City encourages retailers and consumers to bring empty containers back to the store where trucks pick them up to bring them to AB's vertical glass plant. Source: *2018 Annual Report: Shaping the Future*, AB InBev, 2018, https://www.ab-inbev.com/content/dam/universaltemplate/ab-inbev/investors/reports-and-filings/annual-and-hy-reports/2019/190321_AB%20InBev%20RA2018%20EN.pdf.
Boston Beer Co.	In Massachusetts and New York, Samuel Adams works with its distributors to collect, clean, and refill its glass bottles. Samuel Adams also collects beer beyond its freshness date and recycles materials where possible. Source: "Corporate Responsibility," *Boston Beer Co.*, accessed April 30, 2020, https://www.bostonbeer.com/our-company/corporate-responsibility.
Burger King	Burger King Korea and Burger King India have implemented a reusable cup system for in-store guests. Source: Waste and Opportunity Survey, *As You Sow*, 2019.
Chipotle Mexican Grill, Inc.	The company reports it is testing reusable bowls and cups for employee use. The company is also planning to use reusable dishware and cutlery for cities of Berkeley and Monterey in 2020. Source: Waste and Opportunity Survey, *As You Sow*, 2019.
Clorox Co.	Clorox Company disinfecting wipes product and Hidden Valley dressing product joined TerraCycle's Loop pilot program, which launched in the U.S. Mid-Atlantic region in May. Source: "Clorox Joins TerraCycle's Loop Pilot Program," *Nonwovens Industry*, May 30, 2019, https://www.nonwovens-industry.com/contents/view_breaking-news/2019-05-30/clorox-joins-terracycles-loop-pilot-program.
Coca-Cola Co.	Dasani Purefill water vending dispensers reduce single-use packaging. Other programs include Coca-Cola Co.'s Freestyle unit, which is a touchscreen-operated beverage dispenser that is often paired often with refillable beverage containers. Source: Waste and Opportunity Survey, *As You Sow*, 2019.
Colgate-Palmolive Co.	Colgate has established reuse delivery models for a small proportion of products or packaging. The company is also participating in Loop for reusable delivery models. Source: New Plastics Economy, *The New Plastics Economy Global Commitment 2019 Progress Report* (Cowes, UK: Ellen MacArthur Foundation, 2019), https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf.
Diageo PLC	Diageo PLC uses returnable glass bottled as part of its beverage business. Source: *2019 Annual Report*, Diageo PLC, Accessed April 29th, 2020, https://www.diageo.com/PR1346/aws/media/7948/b3801-000797_diageo_ar2019.pdf.
Dunkin' Brands	Since 2013, Dunkin' Donuts has distributed over six million reusable mugs to guests. Over the past two years, it has served nearly 31.6 million beverages to guests in reusable mugs. Source: *2017-2018 Sustainability Report*, Dunkin' Brands, 2019, https://www.dunkinbrands.com/internal_redirect/cms.ipressroom.com.s3.amazonaws.com/226/files/20196/2018%20Sustainability%20Report_Final.pdf.
Johnson & Johnson	Johnson & Johnson has a reusables pilot for its Johnson's Baby product, as well as its Le Petit Marseillais product, which uses a refill model for liquid soap. Source: New Plastics Economy, *The New Plastics Economy Global Commitment 2019 Progress Report* (Cowes, UK: Ellen MacArthur Foundation, 2019), https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf.
Kellogg Co.	Kellogg Company uses bulk shipping of cereal to packing facilities in reusable containers. Source: New Plastics Economy, *The New Plastics Economy Global Commitment 2019 Progress Report* (Cowes, UK: Ellen MacArthur Foundation, 2019), https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf.

COMPANY	REUSABLE PILOT PROGRAMS
Keurig Dr Pepper	Keurig Dr Pepper offers a reusable coffee filter called My K-Cup® which can be filled with any ground coffee. Source: Waste and Opportunity Survey, *As You Sow*, 2019.
KFC	KFC is implementing reusable serving baskets at its store locations in China. Source: *2018 Global Citizenship & Sustainability Progress Update*, Yum! Brands, Inc., 2019, https://www.yum.com/wps/wcm/connect/yumbrands/9b104e05-5c1f-4063-8e35-fef9ec1872e8/YSR-19501+2018+Recipe+for+Good+Progress+Update_SINGLE_PAGE_FINAL.pdf?MOD=AJPERES&CVID=mRKd2FV.
Kroger Co.	Kroger Company has partnered with the Loop circular e-commerce platform. Source: "Kroger + Loop," *Kroger Company*, accessed April 30, 2020, https://www.thekrogerco.com/loop/.
McDonald's	McDonald's restaurants in Germany serve all in-house hot drinks in porcelain or glass mugs, rather than paper cups with plastic lids. Customers of McCafé locations in Germany also have the option to bring their own cups to receive a 10-cent discount on their order. Source: "What We Learned from Berlin's Plastic-Free McDonald's Experiment," *McDonald's*, August 28, 2019, https://news.mcdonalds.com/scale_for_good_berlin_pasticfree_mcdexperiment.
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Nestlé Waters NA	9% of Nestlé Waters NA products are offered through three- and five-gallon returnable bottles to customers across the US. The company also is planning to grow ReadyRefresh and Refill+ products. Source: Waste and Opportunity Survey, *As You Sow*, 2019.
PepsiCo	PepsiCo launched a new hydration platform in 2019 that allows customers to dispense into refillable personal containers. Additionally, the company participates in the Loop e-commerce platform with its Tropicana Orange Juice and Quaker cereal brands. Source: New Plastics Economy, *The New Plastics Economy Global Commitment 2019 Progress Report* (Cowes, UK: Ellen MacArthur Foundation, 2019), https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report.pdf.
Procter & Gamble	Procter & Gamble played a leadership role in helping TerraCycle create Loop's online platform to order products in reusable packaging. Procter & Gamble has seven different brands participating in Loop pilot projects in New York and Paris. Source: Waste and Opportunity Survey, *As You Sow*, 2019.
Starbucks	Starbucks created a three-month trial 5p charge on single-use cups combined with a 25p discount for customers bringing their own reusable cup at 35 stores in London. During the pilot, the use of reusable cups rose from 2.2% to 5.8%. Source: New Plastics Economy, *Reuse: Rethinking Packaging* (Cowes, UK: Ellen MacArthur Foundation, 2019), https://www.newplasticseconomy.org/assets/doc/Reuse.pdf.
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Tim Hortons Inc.	Guests who bring in a reusable cup get a discount on their coffee, and guests who dine in the restaurant are served beverages in a reusable mug. Tim Hortons Inc. has had a reusable cup program since 1978. Source: "Moving from Single-Use to Reusable," *RBI*, accessed April 30, 2020, https://www.rbi.com/IRW/CustomPage/4591210/Index?KeyGenPage=472719.
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