EXAMINING SUSTAINABILITY, CONSUMER CHOICE, AND CONFUSION IN FOOD AND BEVERAGE PACKAGING

NATIONAL CONSUMERS LEAGUE

EXECUTIVE SUMMARY

This white paper examines the recycling enterprise in the United States, consumer understanding and confusion regarding recycling symbols, and packaging options which contribute to sustainability and a circular economy or, alternatively, pollution and waste. Consumer confusion about what is and is not recyclable is exacerbated by an overreliance on the “Mobius Loop” as a packaging symbol; more effective and transparent labeling is necessary to advance sustainability goals for the benefit of consumers and the environment.

The solution proposed is a combined approach of improved labeling, consumer education, public policies to promote bottle and metal can returns through deposit programs and to reduce waste, specifically unnecessary plastic waste. Additionally, the paper puts the impetus on both brand manufacturers and retailers to offer sustainably packaged products, where possible in currently available packaging, improving consumer choice and empowering sustainable purchasing. Finally, the paper recommends that Congress pass legislation to establish standard labeling practices and minimum required information, thereby codifying the enforceability of FTC Green Guide guidelines and increasing the civil penalties for violations.

Implementing a comprehensive packaging sustainability program is not an insignificant undertaking. However, Americans produce an average of 4.51 pounds of municipal solid waste every day, of which only about 35 percent is recycled or composted. The magnitude of this challenge demands thoughtful analysis and informed policies and business models to advance progress.

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I. INTRODUCTION

Fifty years ago, 20 million Americans joined to celebrate the first Earth Day, recognizing en masse the direct linkage between ongoing environmental degradation, and deteriorating public health. Much of the focus at the time was on visible pollution, including the exponential growth of trash and litter in parks, beaches, and neighborhoods. Plastic had exploded in popularity as a packaging material after World War II, and communities were grappling with the surge in waste.

The modern recycling system was born out of this moment. In 1970, the Container Corporation of America sponsored a national drawing contest to design a packaging symbol for recyclable paper. The winner, a college student at the University of Southern California named Gary Anderson, created the now ubiquitous Mobius Loop triangle.[1] This symbol is frequently displayed on paper, plastic, glass, and metal packaging alike. Once informational, it now adds to consumer confusion, which is compounded by misleading marketing campaigns and a patchwork of recycling practices that vary by municipality, packaging material, and other factors.

Consumer confusion leads to a decline in sustainability – when consumers are unable to make informed decisions, or are misled in their efforts to be environmentally conscious, more waste ends up in the landfill and in the natural environment, even as buyers are attempting to make more sustainable purchases.

THIS PAPER WILL EXAMINE

- The environmental and economic sustainability of food and beverage packaging materials
- Labeling practices and their impact on consumer choice and awareness
- Packaging choices of select food and beverage brands and retailers
- Options available to policymakers to increase recycling efficiency and viability

A. NATIONAL CONSUMER LEAGUE'S ROLE AS A CONSUMER EDUCATOR

The National Consumers League (NCL) is America's pioneering consumer advocacy organization, representing consumers and workers on marketplace and workplace issues since our founding in 1899. Headquartered in Washington, DC, today NCL provides government, businesses, and other organizations with the consumer's perspective on concerns including child labor, privacy, food safety, and medication information.

NCL has previously published research, conducted in collaboration with the Harvard University Food Law and Policy Clinic and the Johns Hopkins University Center for a Livable Future, which examined Consumer Perceptions of Date Labels on food items in the context of growing concern over food waste and availability.[2] The report found that food was often thrown away unnecessarily, due to consumer confusion, and identified future areas for study and policy change.

For the purposes of this report, sustainability will be defined by the UN World Commission on Environment and Development official definition: meeting the needs of the present without compromising the ability of future generations to meet their own needs.[3]

II. CHANGING CONSUMER MOTIVATIONS AND IMPACT ON BRAND MARKETING DECISIONS

Millennial shoppers currently spend $600 billion annually in the U.S. market alone; not only are they increasingly demanding "greener" product options, but they are indicating a willingness to invest in their values.[4] According to one report published in Total Retail, 75 percent of millennials are willing to pay extra for sustainable products. Additional research from the New York University Center for Sustainable Business found that 50 percent of the growth in consumer-packaged goods (CPG) from 2013 to 2018 came from sustainability-marketed products, despite products marketed as such only representing 16.6 percent of the CPG market. The Millennial generation has driven growth in canned wine sales, for example, which are attractive for their portability, recyclability, and lightweight construction, which reduces carbon emissions expended during transportation.[5] More research is better needed to understand the weight of sustainability as a factor in purchasing decisions, including determining whether different age groups are willing to change purchasing habits based on packaging sustainability.

Growth in sustainability-marketed products can be a potential motivator for companies to develop more sustainable products, either through adherence to higher labor standards and using fewer environmentally harmful inputs, or through the use of packaging which is truly recyclable and contributes to pollution reduction. However, it can also distort the meaning of sustainability for consumers. This contributes to confusion as more products are marketed as sustainable, under an ever-expanding definition that ignores the practical functioning of a circular economy and the true nature of certain materials. One such example is plastic, which is typically downcycled once before being sent to the landfill. Without examining the real-world environmental and economic outcomes of food and beverage manufacturer sustainability claims – including the true nature of recyclability - consumers risk rewarding companies for investing in "greenwashing" – practice of making an unsubstantiated or misleading claim about the environmental benefits of a product, service or technology, rather than progressive and responsible supply chain and business operations decisions.[6]

A. SUSTAINABILITY MARKETING PRACTICES

As economic incentives to claim sustainability of products and packaging have increased, so have companies' efforts to market to environmentally conscious consumers. However, in doing so, the definition of sustainability has become muddled.

The Federal Trade Commission (FTC) publishes annually its Green Guides, which require that

> *Marketers must ensure that all reasonable interpretations of their claims are truthful, not misleading, and supported by a reasonable basis before they make the claims."*

The FTC further states:

> *In the context of environmental marketing claims, a reasonable basis often requires competent and reliable scientific evidence. Such evidence consists of tests, analyses, research, or studies that have been conducted and evaluated in an objective manner by qualified persons. … Marketers should qualify recyclable claims when recycling facilities are not available to at least 60 percent of the consumers or communities where a product is sold."*[7]

The latter point is critical when evaluating packaging sustainability. Though some items are technically recyclable, even if only once, they are often not practically recyclable. Examples such as plastic-lined TetraPak, which is generally recycled only at TetraPak-administered locations, are further examined in this paper.

A comprehensive survey of the nation's 367 material recovery facilities, conducted by the environmental organization Greenpeace USA, found that, of all the plastic varieties labeled as recyclable:

> *only PET #1 and HDPE #2 plastic bottles and jugs may legitimately be labeled as recyclable by consumer goods companies and retailers… common plastic pollution items, including plastic tubs, cups, lids, plates, and trays, may not be labeled as recyclable according to Federal Trade Commission (FTC) requirements for products and labeling. Additionally, many full body shrink sleeves that are added to PET #1 and HDPE #2 bottles and jugs make those products non-recyclable as well."*[8]

Greenpeace has alerted major retailers and brand manufacturers about the misleading nature of their labels regarding sustainability, stating that it intends to file complaints with the FTC if companies do not alter either their labels, products, or packaging to comply with Green Guide specifications.[9]

However, some of the sustainability claims made by brands and retailers are not intentionally misleading, but are instead expressions of a confusing, splintered system which lacks standardization. Additionally, even if some items are recycled correctly, as indicated by labels or instructions on the packaging, sustainability-marketed products often fail to clarify the continued ability of these materials to be recycled. As in the case of many plastics, outlined within this paper, the practice of downcycling low-grade plastics into other items, which then become single use, is almost certainly not widely understood among consumers. More responsible marketing, sustainable packaging choices, and consumer education will help to address these challenges.

III. EXAMINING PACKAGING OFFERINGS AND THEIR SUSTAINABILITY

Consumers today benefit from the broadest selection of product variety in history; inexpensive bulk foods share shelves with high-quality, organic, non-GMO offerings. While not available to all consumers – the issue of food deserts will be examined elsewhere in this paper – this range of offerings empowers consumers, as brands and retailers are increasingly compelled to work harder to earn, and maintain, customer loyalty. While the importance of packaging sustainability as a factor in purchasing decisions, as well as post-consumption behavior, requires more study to further our understanding of consumer motivations, available data regarding recycling options and rates does provide some insight into areas for progress.

A. CARTONS

Cartons have increased significantly in popularity over the past decade. Perishable items, such as milk and broth, are now sold in cartons, as are dry goods such as crackers and granola. However, these cartons are constructed with a complex mix of materials, combining paper, plastic, and aluminum, which makes recycling inherently difficult and costly.[10] As a result, cartons are recycled at a rate of just 16 percent,[11] and consumers seeking to dispose of them in a sustainable manner often must seek out company-run recycling facilities, rather than municipal solid waste (MSW) facilities with curbside recycling programs. The pollution problem caused by ineffective disposal of cartons is worse in the developing world, where recycling options are even more limited, as evidenced by the carton pollution crisis in Vietnam.[12] Additional consumer research would be helpful to determine the extent to which consumers understand carton recycling availability and cost and construction complexity.

B. GLASS

Glass, long used to package beverages and some specific food items like pickles, remains popular among some manufacturers and consumers. The growth of the domestic wine and craft beer industries in the United States has driven some uptake in glass as a packaging material, as has the backlash against single-use plastics. While glass is infinitely recyclable, it has a mixed sustainability profile.

Its heavy weight increases carbon emissions during shipping, and broken glass can severely disrupt recycling operations, tearing up conveyor belts and jamming sorting machinery.[13] Single-source recycling, in which all recycled items are placed in a single bin, drives up the cost of glass recycling, and threatens its long-term economic viability. About one-third of glass is recycled in the United States.[14]

C. ALUMINUM AND STEEL CANS

Metal cans – typically aluminum for beverages and steel for food – have also benefited from the anti-plastic backlash that has grown along with public awareness of the plastic pollution crisis and its impact on human, animal, fish, and ecosystem health. Metal cans are infinitely recyclable, and recycled steel or aluminum can return to grocery store shelves as a new can in as little as 60 days. These metals do not degrade with time or use, and between 80-90 percent of steel from food cans is still in use today.[15] Cans made from recycled aluminum require 95 percent less energy to make, reducing their carbon footprint even further when efficiently recycled.[16] Metal food cans are recycled at a rate of 73.1 percent,[17] and aluminum beverage cans at a rate of 49.8 percent.[18] In states with bottle and can deposit programs, the recycling rate for aluminum beverage cans climbs to more than 80 percent. Additional research will help shed light on consumer understanding of the endlessly recyclable nature of metal cans.

D. PLASTIC

Plastic packaging is omnipresent in food and beverage offerings; it is recycled at an extremely low rate (9 percent in 2017[19]) and it retains little value after being recycled once, typically turning into new items, such as toys or plastic lumber, which cannot be recycled again. While plastic recycling rates are much higher in states with bottle deposit programs than in those without, they remain much lower than recycling rates for metal cans and glass bottles.[20] Since 2018, when China ended its practice of accepting recycling from other countries, the economic viability of plastic recycling has plummeted, and municipalities have doubled or tripled their recycling fees or turned to plastics incineration as an alternative.[21] Much of the plastic previously shipped abroad now ends up in the landfill or in the natural environment.

IV. THE TRUTH ABOUT RECYCLING

The economic viability of recycling is inherently linked to the sustainability of food and beverage products. If recycling operations are unable to remain financially viable, they will cease to collect packaging waste, which will further exacerbate landfill growth and the plastic pollution crisis. Moreover, if recyclers are forced to move away from curbside collection, recycling participation will be limited to consumers who have the time, and financial resources, to seek out specific, company administered collection programs, such as those run by the popular carton manufacturer, TetraPak.[22]

Certain segments of recycling, including aluminum and steel can recycling, remain economically viable due to the value of their raw materials and the ability to endlessly remake recycled metal cans into new ones. Recycled material from aluminum cans, for example, is worth almost 300 times more per ton than plastic or glass, according to industry data.[23] In addition, a Recycling Partnership 2020 report estimated that aluminum accounts for nearly half of the economic value of recyclable materials produced by a standard household, at just 3 percent of the total weight of these materials. The value aluminum and other materials provide to the circular economy, however, is artificially limited 1) as single-source collection contaminates the supply of recycled containers and 2) as new, effectively un-recyclable items, such as cartons and single-use plastic pouches, take the place of cans and glass bottles on store shelves.

Americans dispose of 80 billion plastic pouches a year.[24] Most end up in the landfill or the incinerator. Programs such as TerraCycle, which encourages consumers to mail used pouches and other plastic-lined packaging using a prepaid label, are not economically viable on their own, instead relying on brand manufacturers which support these reuse efforts in order to market their own products as "Recyclable Through TerraCycle."[25] The inherent fragility of this system makes it unsustainable; it also undercuts the sustainability of traditional packaging manufacturers, such as can and glass manufacturers, whose value chain customers switch out products, benefit from sustainability marketing claims, and yet do not contribute to the circular economy.

V. THE ECONOMICS OF CHOOSING PLASTIC PACKAGING OVER OTHER MATERIALS

Plastic remains a commonly used packaging material among brand manufacturers and primarily due to its low cost. "As a general rule, if polyolefins will do the job, then they will be the least expensive," says Susan Selke, director of Michigan State University's School of Packaging.[26] This cost calculation fails to take into account long-term costs, including the cost of pollution cleanup, damage to recycling machinery and facility shutdown from plastic bags and wrap,[27] and ongoing negative contribution to climate change, in the form of ocean acidification as plastics break down in saltwater.[28] Nor does this account for the application of the costs of plastic pollution and climate changes.

Plastic bottles made from polyethylene terephthalate, or PET, cost the same, on average, to produce as glass bottles, but transportation costs increase significantly due to the weight of glass.[29] Metal cans do not present this cost-of-transportation challenge.

VI. FOOD DESERTS AND FOOD WASTE

Approximately 2.3 million Americans, or about 2.2 percent of all U.S. households, live more than one mile away from a supermarket and do not own a car.[30] These areas are disproportionately made up of low-income and minority communities and may be undercounted: official estimates count corner stores and convenience stores as supermarkets, even though many do not offer fruits, vegetables, or other highly nutritional foods. Residents of food desert communities have fewer healthy options, resulting in diets composed of high fat and sugar content foods (which dropped in price more than 26 percent between 1989 and 2005[31]) and leading to higher rates of obesity, type 2 diabetes, cardiovascular disease, and other diet-related conditions[32]. Food deserts are not limited to urban settings; they proliferate in rural communities as well, especially where there are older Americans with limited access to transportation. More than 50 percent of all ZIP codes with a median income below $25,000 are designated as food deserts, twice as many as the total share of food-desert designations across all ZIP codes (24 percent).[33]

Food packaging plays a critical role in alleviating the burden of food deserts on affected consumers. By preserving freshness, reducing spoilage, and preventing the spread of food-borne illnesses, properly packaged food can offer more options for nutrition. Canned food has long been recognized for its low-cost convenience, important for alleviating food desert challenges. Food packaged in plastic and plastic cartons offer similar benefits for nutritional supply combined with waste reduction while maintaining shelf stability, especially for fresh fruit and vegetables. However, plastic production has been found to disproportionately increase air pollution in low-income neighborhoods, and missed trash and recycling pickups[35] and plastic refuse is more common[36] in economically disadvantaged neighborhoods.

VII. LABELING AND SYMBOLOGY

The myriad of recycling labels, unjustified use of the Mobius Loop triangle, and significant variations in recycling practices from city to city and state to state cause confusion among consumers. Plastic resin identification codes can lead consumers to both overestimate and underestimate their recyclability.[37] Incorrect disposal can lead to recycling stream contamination and cost increases due to additional need for sorting. This issue is further compounded by the presence of hybrid-material containers, such as cartons composed of plastic, aluminum, and cardboard, which are not accepted at all locations but are generally labeled as "recyclable." Recycling symbols and labels often fail to distinguish curbside recyclability, which is true for aluminum and steel cans and most glass bottles, but not for newer hybrid containers. Further research regarding consumer understanding of the Mobius Loop triangle's purpose would better the education and advocacy efforts of NCL and other consumer organizations.

A. EXISTING RECYCLING SYMBOLOGY AND LANGUAGE

The Mobius Loop symbol appears on a wide array of products, from food and beverage products, to textiles, electronics, and household products. Over the years, that symbol has been used in many contexts for various packaging materials.

Brand manufacturers' (brands) use of a Mobius Loop recycling symbol or something similar is not an indicator that the material is recyclable in all localities, but can instead serve as a descriptor of the material from which the packaging is made. Additionally, some food and beverage products may not have any recycling logo featured but may still be recyclable. Because recycling logos and language are not standardized, brands and consumers may be confused about what they can use to accurately label their products, and what they can toss in their recycling bins, respectively. The vast array of symbols and recycling options for consumer products needs to be addressed.

Brands often use recycling symbols and accompanying language on packaging to clarify, inform, or encourage consumers to take a specific action. As discussed previously, the FTC has published its "Green Guide" since 1992 for businesses to help organizations avoid making misleading environmental claims. Additional topics from the Green Guide are included below:

> *If any component[39] significantly limits the ability to recycle the item, any recyclable claim would be deceptive. An item that is made from recyclable material, but, because of its shape, size, or some other attribute, is not accepted in recycling programs, should not be marketed as recyclable.*
>
> *Marketers should make recycled content claims only for materials that have been recovered or diverted from the waste stream during the manufacturing process or after consumer use.*
>
> *Marketers should qualify claims for products or packages made partly from recycled material – for example, "Made from 30% recycled material."*

For consumers, guidance from the FTC is less detailed. The most common guidance is for consumers to contact their local recycling operations to check if certain items are recyclable. With respect to recycled content, the FTC advises[40]:

> *If a product says it's made with recycled materials, look for specifics. Are the claims about the product, the packaging, or both? How much of the product or package is made with recycled content? Unless the product or package contains 100 percent recycled materials, the label should tell you what portion is recycled."*

The FTC can take action under the FTC Act if a marketer makes an environmental claim inconsistent with the guides. The FTC and courts employ a "reasonable consumer test" to determine how fair-minded consumers in a general audience are likely to interpret certain claims."

However, often the recyclability of an item is dependent on the locality in which it is disposed. Currently, it is up to consumers to educate themselves on whether their local recycling operation will accept certain food and beverage packaging items, regardless of what symbol or language appear on the packaging. Certain brands have made attempts to encourage recycling of their products by increasingly using more descriptive and informative language and symbols.

Below is a discussion of some of the most common symbols used by brands in the United States to indicate recycling and/or material used.

1. UNTRADEMARKED RECYCLING SYMBOLS COMMONLY FOUND ON FOOD AND BEVERAGE PACKAGING

These symbols can be used and adapted for use by any brand if their use does not violate the FTC's rules for environmental marketing claims.

UNIVERSAL RECYCLABLE SYMBOL, MOBIUS LOOP

The universal recycling symbol is easily recognizable and is used in many different countries around the world, including the United States. This symbol is commonly used on different food and beverage products, including paper, plastics, cartons, glass, and steel and aluminum. Brands should use this symbol is to communicate to consumers a product or its package is recyclable or was made with recycled content, according to the FTC.[42]

PLASTIC RESIN IDENTIFICATION CODES AND SYMBOL(S)

Plastic recycling is a notoriously confusing and convoluted process, and the labeling system brands often use for plastic food and beverage packaging is no different. Plastic products alone use seven different symbols to indicate what type of plastic the item is made of. These symbols, created by plastics manufacturers, feature numbers inside a version of the Mobius Loop with letters below. These are called Resin Identification Codes, or RICs[43] . RICs help to identify the type of plastic material used in the products, and according to the EPA[44] , these symbols can help consumers "determine if the container can be accepted by their local recycling program."

While these symbols look very similar to the recycling symbol, products with certain RICs may not be accepted by all community recycling programs. And unfortunately, some types of plastics, which are commonly used in food and beverage packaging, are often not accepted by local recycling programs at all. In the case of plastic recycling, these symbols can be misleading, simply because consumers may not realize the symbol does not indicate recyclability, but rather, type of plastic used. In addition, many of these plastics cannot be recycled into the same product again, and instead, are downcycled. This information is not currently communicated effectively on the product.

RECYCLED SYMBOLS

Packaging marked with this symbol indicates that some percentage of the product has been made with recycled materials. These symbols are commonly found on paper or cardboard materials but can be found on other materials as well. An alternate symbol used is the same Mobius Loop which features a percentage number inside the triangle of arrows, which indicates specifically what amount of product was made with recycled materials, in accordance with FTC guidelines.

METAL RECYCLING SYMBOL(S)

The Mobius Loop with the code “41” in the center and “ALU” below helps consumers identify aluminum as the recyclable content in cans. Another popularly used symbol is one featuring a circle with chasing arrows with “alu” in the center.

Aluminum is a recycling success story. The recycled content of the average aluminum can now in use is 73 percent[45] . The recycling rate for aluminum cans is also high, at about 49.8 percent. Consumers consistently recycle more aluminum beverage cans than any other beverage container. Much of this is made possible because local recycling programs accept aluminum cans, due in large part to the ease of capture and economic value to recycling facilities. However, it is unclear whether the symbols used to indicate recycled aluminum content affect either consumer purchasing or recycling behavior; more research is needed in this area.

Brands’ steel food cans also use a similar symbol, with the code to indicate that steel is the recyclable content. Steel food cans are another product that is easily and commonly recycled. The EPA[46] estimates the recycling rate for steel cans to be about 71 percent. Like aluminum, a steel food can will become a steel food can infinitely.

PAPER/CARDBOARD RECYCLING SYMBOL(S)

The Mobius Loop with the code “20” in the center and “PAP” below helps consumers identify cardboard as the recyclable content in packaging. Many, if not most, local recycling operations accept paper and cardboard products, with a few exceptions. Over half[47] of cardboard collected is used to make new cardboard boxes, and additional cardboard can be downcycled into paperboard, which is a material many brands use for cereal boxes. As paper materials get recycled, their fibers get shorter and shorter, eventually degrading to a point where recycling is no longer viable. This usually occurs after five to seven recycling cycles.[48]

GLASS RECYCLING SYMBOL(S)

A Mobius Loop featuring the code “70” in the center denotes mixed glass as the recyclable content, “71” denotes clear glass, and “72” denotes green glass[49] . All three of these glass types are used for food and beverage packaging. Most glass products, especially those used for food and beverage packaging, can be recycled over and over again. Glass is accepted by most local recycling operations, although, some local programs require glass to be sorted because of the challenge glass shards present in the sorting process.

2. INDUSTRY-CREATED RECYCLING SYMBOLS ON FOOD & BEVERAGE PACKAGING

The following symbols were created by industry groups for use by brands, primarily with the goal of encouraging recycling for the respective packaging materials.

STEEL RECYCLING SYMBOL

According to the Steel Recycling Institute[50] , this logo "is for use on all-steel food, beverage, and general purpose cans of all sizes and shapes in its complete form... and can be displayed on packaging and/or websites… to educate consumers on your product's recyclability."

GLASS RECYCLING SYMBOL

This symbol[51] was created by the Glass Packaging Institute[52] and is used to encourage glass recycling.

RECYCLED SYMBOL FOR PAPERBOARD

The 100% Recycled Paperboard Alliance launched this trademarked symbol to note products that are packaged in 100% recycled content. The use of the symbol is available as part of a licensing and certification program.[53]

METAL RECYCLING SYMBOL - EUROPE

Metal Packaging Europe has developed and recently introduced the Metal Recycles Forever logo. A recent consumer poll in the United Kingdom found that the logo performed the strongest at communicating that certain packaging "can be recycled" or "will be recycled".[54]

3. THE LANGUAGE OF RECYCLING

Like symbols available to brands for food and beverage packaging seen commonly on store shelves, the language used on this packaging related to recycling or recyclability is often vague, inconsistent, and relatively unhelpful to even savvy consumers. Arguably the most popular phrase seen on food and beverage packaging, "Please Recycle," does not instruct the consumer, but rather encourages them to take an action that may be unavailable to them in their area. More data is needed to better understand consumer access to recycling programs, and participation in them.

Qualifying language, as described in the FTC's Green Guides, can also be found on packaging. These phrases may read "this product may not be recyclable in this area." Phrases like this are commonly found on cartons and flexible pouches due to the limited or nonexistent number of curbside recycling operations that will accept these products. Additionally, these phrases are included by brands to adhere to the FTC's guidelines, but do not necessarily help consumers understand the product's recyclability. Further research is needed to determine consumer familiarity with local guidelines.

4. THIRD PARTY LABELING INITIATIVES

In the last decade, brands are increasingly using independent labeling systems to help inform and educate consumers on the recyclability of their products, including what steps to take to make sure the product is recycled correctly. These label programs, most notably SmartLabel and How2Recycle, seek to bring clarity to recycling symbols by making more detailed recycling information available to consumers. Many brands have adopted these labels to be more transparent and educate consumers on an item's recyclability.

Launched in a joint initiative by the Grocery Manufacturers of America and the Food Marketing Institute in 2018, the SmartLabel[55] appears on many food and beverage products. These labels can be scanned using a smart phone in the store or can be researched at home prior to shopping to inform consumers on a range of purchasing decisions. Ingredients, allergens, and caloric information all appear on the SmartLabel scan, along with recycling information. According to SmartLabel's website, "SmartLabel was created by a group formed by the Consumer Brands Association and the Food Marketing Institute called the Trading Partner Alliance. It was announced in December 2015. More than 40 companies and hundreds of brands use SmartLabel® on tens of thousands of products." The National Consumers League, in fact, conducted extensive outreach through radio and television programs across the country to encourage consumers to use the SmartLabel logo.[56]

How2Recycle, another labeling initiative, addresses the lack of detailed recycling information available on brand products today. The initiative began in 2008 as a project of the Sustainable Packaging Coalition , and "by 2020, has grown to over 225 brand and retailer members[58] and has issued more than 100,000 design recommendations to members to make their packaging more recyclable." Many of these include food and beverage brands. According to How2Recycle's website, their goals[59] are:

- Reduce confusion by creating a clear, well-understood, and nationally harmonized label that enables companies to convey to consumers how to recycle a package.
- Improve the reliability, completeness, and transparency of recyclability claims.
- Provide a labeling system that follows Federal Trade Commission Green Guides.
- Increase the availability and quality of recycled material.

Brands can use these labels to include detailed information about how to recycle the product, including:

- Information on how to prepare the components of the packaging to recycle them most effectively (e.g. rinse and insert lid, empty, and replace cap, etc.)
- Information and locational instructions let consumers know if an item can be recycled traditionally or by other means (e.g. widely recycled, not yet recycled, etc.)
- Type of recyclable material (e.g. metal, glass, plastic, etc.)
- Information on what parts of the packaging needs to be recycled in this specific way (e.g. can, bottle, box, etc.)

Brands opting to use these labels may be improving the chances of their product being recycled, where possible. According to a consumer survey[60] conducted by How2Recycle in 2018, of consumers who purchased products with How2Recycle labels, "61 percent say they will change their behavior as a result of the label, and 85% of respondents say they are or might be more likely to purchase a product with the How2Recycle label."

More importantly, How2Recycle provides brands with feedback about a product's recyclability, including "specific practical recommendations for design improvement." According to How2Recycle[61], the organization "has issued over 100,000 specific recommendations for packaging design improvement to its members since late 2017. These recommendations have led to over 1,500 packaging designs specifically changing to become more recyclable as a direct result."

Example: How2Recycle logo for metal can

VIII. BRANDS

Brands often use some combination of the untrademarked logos, industry-created logos, and third-party labeling to convey the recyclability of their products to consumers. Certain brands strive to make sustainability and recycling initiatives a core part of their mission. As consumers are becoming more eco-conscious and making purchasing decisions based on environmental impact, it is likely that more brands will start to closely examine their packaging offerings. According to a Packaging Digest 2019 survey, "60 percent of consumer-respondents want non-plastic packaging options." Brands both large and small are hearing and responding to evolving consumer sentiment and increasing pressure. For example, "Nestle is investing $2 billion to accelerate the development of sustainable packaging solutions. Similarly, Conagra Brands is aiming to convert the entirety of its plastic packaging into renewable, recyclable. or compostable packaging by 2025," according to Food Business News.[62]

While the shift to packaging design with sustainability in mind is promising, some brands can serve as examples due to their sustainability commitments and associated business decisions, including packaging and marketing their products with sustainability as a core principle from brand inception.

A. CASE STUDY: RED BULL

Red Bull, a popular an energy drink brand, was created in Austria is 1987 and launched in the United States in 1997. Red Bull has the highest market share[63] of any energy drink, with more than 7.5 billion cans[64] sold in 2019. From its inception, Red Bull has exclusively used an aluminum can for all product lines, primarily due to aluminum's excellent sustainability and recycling profile.

Beyond choosing a packaging option that is highly recyclable, Red Bull has also made an effort to incorporate sustainability into the company's profile and to increase consumer awareness around sustainability initiatives. The brand's website prominently displays a sustainability section. This portion of the website[65] covers some of the core initiatives Red Bull has undertaken to make the product more sustainable, including the use of the aluminum can and importance of recycling, resource-conserving production operations, transport of products in an environmentally friendly way, and the use of energy-saving coolers.

Red Bull has also made a concerted effort to support and encourage customers to recycle cans at public events. In Europe, Red Bull was the first brand to partner with Every Can Counts[66], which encourages the collection of cans in offices and public spaces. At Red Bull's Flugtag events across Europe, Red Bull and Every Can Counts, in an attempt to educate and engage consumers on the importance of recycling, encouraged visitors to contribute[67] empty cans to the creation of a recycled can artwork built during the event.

In the U.S., Red Bull hosted a #RecycleRight[68] social media activation at the 2020 Waste Management Phoenix Open golf tournament, much like it has done with events in Europe, where visitors toss their empty Red Bull cans into an interactive display.

B. CASE STUDY: CENTO FINE FOODS

Cento Fine Foods[69], headquartered in New Jersey, produces and packages more than 1,000 specialty products under eight proprietary brands. These products range from pastas and peppers to tuna and tomatoes. Arguably the most recognizable and popular of their brands is Cento, which alone includes more than 1,000 imported Italian products.

Cento has a robust sustainability profile[70], which includes initiatives in sustainable farming. According to Cento's website, "farms are carefully selected prior to each growing season and we practice crop rotation, growing a series of different crops in the same area in sequenced seasons. We also implement steps on our farms to reduce CO2 emissions, save water, and reduce byproduct waste."

The brand also practices sustainability when producing their line of canned tuna. Cento states that "Cento Tuna is wild-caught and dolphin safe, as well as certified sustainably produced and traceable. Our Marine Stewardship Council (MSC) Certified Sustainable Seafood ensures that our products can be traced back to MSC Certified Sustainable wild-capture fisheries, which helps create a sustainable seafood market through viable fishing practices."

Cento also has made a commitment to listen to consumer opinions and concerns as it relates to packaging choices. For many products, including their well-known San Marzano tomatoes, Cento uses steel cans, which are infinitely recyclable[71]. Cento notes that "buying canned food helps offset the 34 million tons of food wasted in the United States each year."

The company is continually working to stay up to date on the most environmentally friendly packaging options[72]. Although, when it comes to recyclability, there is room for improvement. While most of Cento's tomato products, tuna, and other produce selections are packaged in steel cans or glass jars, both of which are infinitely recyclable, Cento also uses aseptic packaging, or cartons. While cartons are lightweight and convenient, many curbside recycling operations will not accept this packaging.

IX. RETAILERS

A. RETAILER OPPORTUNITIES TO SHAPE SUSTAINABILITY TRAJECTORY THROUGH PRIVATE LABEL BRANDS

In-house retailer brands, referred to as "private label," have witnessed tremendous growth in recent years. Consumers continue to reward these brands for offering lower-cost alternatives to their preferred selections, as retailers seek to maintain or improve quality and dedicate greater resources to marketing private label products, including through the use of sustainability marketing. Dollar volume of private label brands sold by mass retailers, like Target and Costco, grew 41 percent from 2013-2018, compared to 7.4 percent growth for "national" (i.e. non-retailer affiliated) brands over the same period. Grocery store private label volume grew 33.2 percent in the same five-year period, while national brands grew by 1 percent.

B. CASE STUDY: ALBERTSONS

Albertsons is the second-largest grocery store chain in the United States, after Kroger Foods. With 2,200 stores, 267,000 employees and $60.5 billion in annual sales, Albertsons in a major driver of trends across the grocery industry, including food and beverage sustainability.[73] Albertsons, for example, has grown its Open Nature brand offerings significantly, while committing to increasing the environmental friendliness of its products. In 2019, the grocery store chain added 17 sustainable products to the Open Nature brand offering, with sustainability defined as tree-free, BPA-free, plastic-free, and plant-based, focused mostly on picnic wares and other single-use items, such as garbage bags, which are now certified as compostable by the Biodegradable Products Institute.[74] Thousands of customers were included in the product and logo and packaging aesthetics design process, a level of participation which aligns consumer desires with company offerings from the beginning. Albertson's has expressed optimism that Open Nature will be its "next billion-dollar brand."[75]

While it appears that Albertsons has successfully capitalized on shifting consumer sentiment regarding sustainability, it has not included packaging as a measure of its sustainability progress. Further examination of opportunities for packaging transition should be conducted. This is especially true where alternatives already exist, such as transitions from fruit jelly sold in plastic jars to glass ones, or broth currently sold in plastic-lined cardboard cartons to metal cans and could be executed without undue cost to producers. Plastic source reduction is a key component of sustainability and, when combined with low-cost packaging alternatives such as metal cans, would also effectively reduce food waste.

C. SMALL RETAILER EFFORTS TO DESELECT

In purchasing environments where retailers are not offering private label products, far more common than those in which retailers are offering in-house brand products for sale, sustainability initiatives can still play an important role in building trust and loyalty with environmentally conscious consumers. Nearly 50 percent of all consumers polled in one survey stated their willingness to pay more for a sustainable product.[76] Of course, the reverse may be true as well – eco-conscious consumers may be willing to change their purchasing habits to avoid certain retailers if their offerings are deemed insufficiently sustainable. Opportunities exist for a wide range of smaller retailers – outside the major grocery store chains – to offer products in more environmentally sustainable packages, including convenience stores, airport vendors, movie theatres, and independently owned grocery stores.

D. CASE STUDY: SAN FRANCISCO INTERNATIONAL AIRPORT

In 2019, San Francisco International Airport (SFO) announced a ban on single-use bottled water sales. The airport shifted its focus to refillable and recyclable options; "hydration stations" were installed for travelers to use to refill their water bottles throughout the airport, and endlessly recyclable canned water, as well as refillable water bottles, replaced plastic bottled water at airport restaurants and stores. SFO earned numerous accolades for this move, rare praise given the frequent criticism of the air travel industry for its failure to adapt to shifting demand in the face of the climate change crisis.

SFO retailers still sell non-water beverages, such as soda and juice, in plastic bottles, and are able to sell water in plastic bottles larger than one liter.[77] We believe the airport should consider closing these loopholes to further advance its stated sustainability goals, and should expand its recycling program, in order to ensure that consumers are able to seamlessly and sustainably dispose of their aluminum can or glass bottle purchases and, in doing so, contribute to the circular economy.

X. POLICYMAKERS

Policymakers at the local and state level, recognizing the dual threats of plastic pollution and costly, inefficient recycling practices, have acted in recent years to reduce plastic waste at the source. Not only have these policies generally been effective in reducing single-use plastic waste, but some have also been revenue generators for municipal and state governments.

New policies restricting plastic sale and distribution have been implemented against the backdrop of existing municipal waste collection and bottle deposit programs. 10 U.S. states currently administer consumer-friendly bottle deposit programs, which differ considerably from state to state.[78]

A. PRODUCT RESTRICTIONS AND BANS

In 2020, New York City acted to phase out the purchase of plastic bottles with taxpayer dollars. New York's action will eliminate the purchase of at least 1 million single-use plastic beverage bottles annually and will save NYC taxpayers hundreds of thousands of dollars.[79] The Trump Administration ended a ban on bottled water sales in National Parks in 2017, seven years after the ban was implemented by the Obama Administration.[80]

The City of Chicago enacted a $0.05 tax per bottle of water on January 1, 2008, which has since generated millions of dollars annually in revenue for the municipality. Washington state passed a bottled water tax in 2010, which led to a marked reduction in the consumption of bottled water. While the ban was later repealed, early studies of the tax's effect indicated a 6.4 percent reduction in purchases.[81]

B. DEPOSIT PROGRAMS

Bottle and can deposit programs are currently administered under various regimes in California, Connecticut, Hawaii, Iowa, Oregon, Massachusetts, New York, Maine, Michigan, Oregon, and Vermont. Each program varies, but all typically apply small deposits - $0.05 or $0.10 per container – which are collected by consumers after being returned to specified locations. The empirical data generated by these programs highlight their indisputable effectiveness – while the 10 deposit program states consume about 25 percent of all beverage cans, they generate 33 percent of all recycled cans, according to a report from Circular Matters. Oregon's bottle deposit program is generally recognized as the most sophisticated, as it is administered by a state-chartered non-profit organization and allows for consumers to receive payment in the form of retailer gift cards, which directly supports local economic activity. Oregon's container redemption rate has topped 90 percent in recent years.[82]

State programs on uncollected deposits vary – Oregon and Iowa allow distributors to keep unclaimed deposits, while California and Iowa use them to help fund administration costs for their programs. Other states follow the principle of "escheats," regarding uncollected deposits as unclaimed property, and return all or some of the funds to the state revenue department. Michigan, for example, dedicates 75 percent of funding stemming from uncollected deposits to its clean environment fund.[83]

C. CASE STUDY: CALIFORNIA

California's bottle deposit program is administered by the state-run CalRecycle; in 2017, estimates found that Californians recycled, composted, and source-reduced almost 32.8 million tons of waste, at a recycling rate of 42 percent.[84]

California is notable for its deposit amount differentiation, with $0.05 deposit for containers under 24 ounces and $0.10 for containers over 24 ounces. Additionally, California charges variable producer fees – $0.06 for PET bottles and $0.29 for glass. Manufacturers of metal cans, which are endlessly recyclable and hold economic value based on the price of scrap materials, are not charged producer fees. According to the 2020 State of Curbside report, "Even though aluminum cans are 3 percent by weight of all recyclable materials generated at single family homes, aluminum cans are nearly 50 percent of the revenue of those recyclable materials."[85] Bottle deposit programs should take into account the scrap material value of recycled products when assessing producer fees and bottle deposit amounts.

Several major operators of independent recycling and processing sites have shut down in the state, citing various issues including the economics of recycling plastic which, due to export restrictions imposed by China in 2017, can no longer be exported in an economically feasible manner. Environmental and consumer advocates have lobbied the state legislature to use reserve funds from unreturned deposits to shore up the program. Without widely available container return centers, the deposit program will essentially act as a tax on consumers without the means or ability to travel farther distances to return beverage containers.

XI. RECOMMENDATIONS

Packaging sustainability is a critical component of overall consumer product sustainability, yet it is often overlooked by companies seeking to invest in their sustainable offerings. Research has shown that forward-thinking companies are rewarded for their actions, especially among Millennial and Gen Z shoppers, yet these companies may still be overlooking packaging as an area for progress. Consumers should vote with their wallets, educating themselves on the realities of recycling and then making food and beverage purchasing decisions accordingly, avoiding plastic and selecting aluminum and steel cans and glass bottles and jars wherever feasible.

A. BRANDS

I. While in recent years some brands have made a shift to offering more sustainable and environmentally friendly products, more brands should continue to consider ways they can adopt more sustainable practices, especially where food and beverage packaging is concerned. Specifically, brands should consider switching products packaged in plastics, certain cartons, and flexible pouches to metals, where appropriate, such as aluminum and steel, or glass, both of which are endlessly recyclable.

II. Alternately, in cases where switching to metal or glass packaging is not an option, brands should consider packaging that is either biodegradable or compostable.

III. To help better educate and inform consumers, brands should adopt a comprehensive and uniform labeling system, like those offered by SmartLabel and How2Recycle, to clearly communicate the recyclability of packaging and to encourage consumers to recycle effectively.

IV. In addition to adopting a comprehensive labeling system, brands should make a concerted effort to be more transparent in marketing their products, especially as it relates to the recyclability of certain food and beverage products. For items that are not truly recyclable, brands should refrain from including imagery associated with easy recycling, and instead, clear, detailed information about the recyclability of certain products should be easily accessible for consumers.

B. RETAILERS

I. In addition to adopting a comprehensive labeling system, brands should make a concerted effort to be more transparent in marketing their products, especially as it relates to the recyclability of certain food and beverage products. For items that are not truly recyclable, brands should refrain from including imagery associated with easy recycling, and instead, clear, detailed information about the recyclability of certain products should be easily accessible for consumers.

II. Like brands, retailers should adopt a comprehensive and uniform labeling system for their private label products, like those offered by SmartLabel and How2Recycle, to clearly communicate the recyclability of packaging and to encourage consumers to recycle effectively.

III. Retailers should focus on offering brands in their stores that are leading by example and offering more sustainable packaging and practicing transparent marketing of products based on recyclability and sustainability.

IV. Smaller retailers such as airports, movie theaters, amusement parks, and other limited-distribution settings should consider partnering with consumer and environmental advocates to ban sales of plastic-bottled beverages and offer more sustainable alternatives. This could be achieved through pilot programs, paired with robust consumer education about the real-world operations of the circular economy.

C. POLICYMAKERS

I. Congress should adopt a law to establish standard labeling practices and minimum required information, thereby codifying the enforceability of FTC Green Guide guidelines and increasing the civil penalties for violations.

II. States should implement bottle deposit programs, which will 1) decrease plastic pollution and increase recycling rates, and 2) provide revenue streams for consumer education and sustainable public policy programs. A properly funded deposit program is essential to ensuring that redemption centers are widely available for consumers to return their containers and should be present at both stand-alone facilities and at retailers easy access to these locations, otherwise bottle deposits will act as a tax on disadvantaged consumers. These programs must take into account the differing values of recycled aluminum versus plastic, or plastic-lined cardboard, and assess deposit and retailer fees accordingly.

III. Where states are unwilling to pursue bottle deposit programs, municipalities or counties should consider a plastic bottle tax on water, soda, and other beverages.

IV. Consumer education for adults is a critical component of improving sustainability; however, consumer education must begin at the elementary and secondary levels. Consumers are understandably confused by the different labeling and recycling options on products. Clarity in labeling, along with leadership from federal and state agencies and solid waste facilities and collection services, would be tremendously helpful in helping consumers better understand recyclability of their packaging waste, including the central fact that food and beverage metal cans and glass bottles are endlessly recyclable.

By combining consumer education with policy initiatives, especially as cities and states transition to outright bans on plastic bottles, policymakers can maximize attention paid to sustainability issues without placing an undue burden on consumers to seek out a new set of information before their purchases.

V. A federal statute would bolster and give definition to patchwork of state legislation. Two separate bills, the Break Free From Plastic Pollution Act (HR 5845, lead co-sponsors Senator Tom Udall, Representative Alan Lowenthal, Senator Jeff Merkley and Representative Katherine Clark) and the Original Recycling Bottle Act (S.3281, lead sponsor Senator Jeff Merkley, are good starting points for a national framework. Congress should invite stakeholders– including consumer advocates, brands, and retailers, as well as operators of manufacturing facilities – to the table to provide substantive input and help shape bills that could garner support from industry and a wide bipartisan swath of Congress.

D. CONCLUSION

A comprehensive approach to improving both sustainable food and beverage packaging offerings and consumer recycling will have broad consumer and environmental benefit, while providing additional benefits to disadvantaged communities affected by food deserts and plastic pollution. This approach must include:

- Transparency in marketing, as well as a labeling system that clarifies recyclability.
- Brand and retailer selection of sustainable packaging, which will empower consumers seeking to make environmentally conscious purchasing decisions.
- A recycling system which is supported by bottle deposit programs, taking into account material value and acting as a revenue stream for sustainability policies and consumer education.

NCL believes that such an approach will improve the lives of consumers and conditions of communities, and is prepared to engage with policymakers, industry leaders, consumer protection advocates and others to make it a reality.

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