

PepsiCo's Work to Improve Recycling in the U.S.

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Recycling is a key part of PepsiCo's long-term approach to sustainable packaging for our food and beverage products. We strive to support recycling wherever we do business, and as a U.S.-based company with significant operations, sales and local presence in cities and towns across the country, including over 100,000 employees, we have a special responsibility to do our part for U.S. recycling.

Packaging plays an essential role in safely delivering our products to customers and consumers. In addition to food safety, packaging also ensures the highest quality of our products when they reach consumers while minimizing food waste. In choosing our packaging, PepsiCo also focuses on its environmental footprint, and we know we have an important role to play in protecting the health of our oceans and ecosystems. We do this by optimizing the materials used in our product packaging, continually improving our packaging designs, and supporting increased recycling, among other environmentally-friendly approaches to packaging disposal. Taking these actions is a critical part of our Performance with Purpose sustainability agenda as we strive to build a PepsiCo where plastics need never become waste.

Packaging and other materials are often disposed of improperly, and we share the concern that waste – especially plastic waste – is collecting in the marine environment and on land. The problem of waste and litter is challenging and requires action by a collection of stakeholders. But post-consumer materials have value, and with improved recycling we can capture that value and use the material for the next generation of packaging.

Recycling systems are complex and involve a diverse set of actors that include consumer goods companies, waste management and recycling industries, packaging manufacturers, governments and consumers, among others. All of these stakeholders are needed to lift the U.S. recycling rate, which has much room to improve. According to the U.S. Environmental Protection Agency (EPA), in 2015 the amount of municipal solid waste (MSW) recycled was only 35 percent.¹ The rest was landfilled, incinerated, composted or littered. Although recycling of paper and paperboard stood at 67 percent², the recycling rates for plastics, glass and metals were much lower at 9, 26 and 34 percent³, respectively. In contrast, MSW recycling rates above 50 percent are found in a number of European and Asian countries.⁴

With respect to beverage containers specifically, the American Beverage Association (ABA) estimates that the recycling rate for containers sold by ABA members was 36 percent in 2016. Although this represents a significant amount of PET, aluminum and glass that was recovered, the container recycling rate has stagnated and needs to improve. Despite having value, the majority of the beverage industry's materials are not being recovered in the U.S.

The reasons for low recycling rates are varied, but solutions exist. To start, we can increase recycling by designing packaging and other products to fit within the recycling system; in simple terms, we need to eliminate designs that cause problems for recyclers. Additionally, we know that people need better access to curbside recycling collection; only 53 percent of Americans have curbside recycling automatically provided at their homes, while more than 25 percent of Americans rely on drop-off recycling programs or have no recycling programs available.⁵ Recycling infrastructure needs to improve as well, including state-of-the-art material recovery facilities with advanced technology, and this requires significant financial investment. Recycling needs dependable end markets for the material that is being recovered. Lastly, recycling needs the support and enthusiasm of the public, including better information and education so the public can understand how recycling works and participate more effectively, which will reduce the amount of contamination in the recycling stream and lower costs for recyclers. With all of these improvements, recycling systems in the U.S. will grow, become more efficient and produce high-quality material that has better market value.

¹ US EPA. [National Overview: Facts and Figures on Materials, Wastes and Recycling](#). EPA web site.

² Ibid.

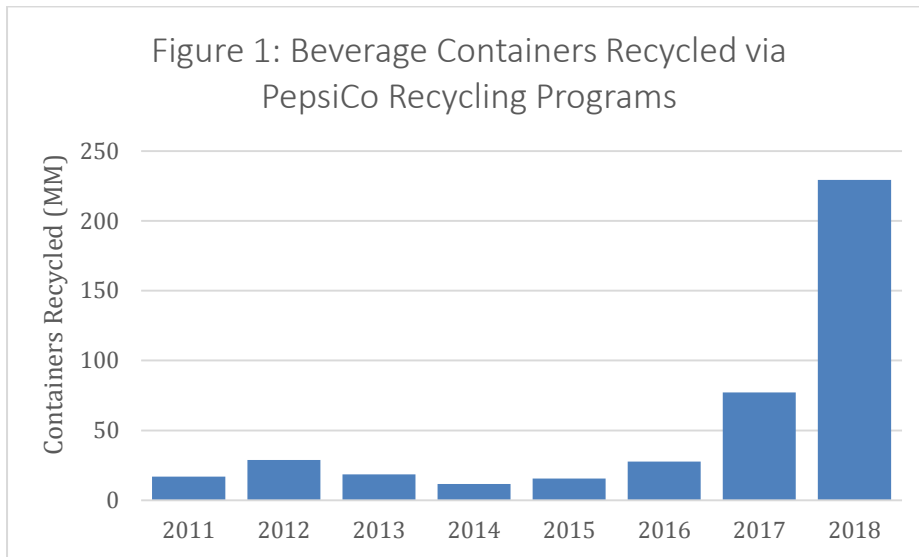
³ Ibid.

⁴ Eunomia. [Recycling – Who Really Leads the World?](#) (Issue 2) December 2017

⁵ Opt-in and subscription programs account for the remainder of the population. RRS & Moore Recycling Associates, Inc. [2015-16 Centralized Study on Availability of Recycling](#). Commissioned by Sustainable Packaging Coalition. 2016.

PepsiCo's Initiatives from 2010 to 2018

PepsiCo has a long history of working to improve recycling rates in the U.S. We created our own PepsiCo Recycling program to test new approaches to recycling and expand relationships through over 600 programs with municipalities and commercial sites. Our efforts have included a variety of partnerships, pilots, large-scale programs and packaging innovations. Some of these efforts have produced good results and others have taught us important lessons about the best ways to reach consumers and design collection systems to improve recycling in the future. Overall, PepsiCo Recycling has helped recycle over 425 million bottles and cans since 2010 (figure 1).



The vision for our recycling work began to take shape in 2006 when PepsiCo launched the first phase of Performance with Purpose, our long-term strategy on sustainability. As part of this strategy, we pledged to reduce, reuse and recycle our packaging and waste. We sought to leverage our reach and influence to attract more attention on recycling. Then, in 2010, we set an objective to create partnerships that would promote the increase of the U.S. beverage container recycling rate to 50 percent by 2018, looking to inspire other companies to join the effort. We were successful in helping to form important new partnerships, and today many important stakeholders are working harder on recycling, but the involvement of all companies across the value chain is necessary to make a significant impact. The following are highlights of PepsiCo's journey to improve recycling in the U.S., including some of our motivations and learnings.

2010: Creating a dedicated recycling program and team

In 2010 PepsiCo launched the Dream Machine program, which used reverse vending machines (RVMs) to collect bottles and cans. RVM technology takes different forms and can play an important role in a variety of container take-back systems. This was PepsiCo's first major effort in recycling and became an iconic program at the time. PepsiCo created a dedicated team known as the Dream Machine Team to run the program, which would later become [PepsiCo Recycling](#). While some of the machines in that early program did very well, it soon became clear that we could collect more bottles and cans per dollar of investment using other approaches, and learnings from Dream Machine began to feed into programs such as [Recycle Rally](#).

[Recycle Rally](#) is a PepsiCo-funded recycling education initiative also launched in 2010 that has grown into one of our flagship programs today. It is designed to engage teachers and educate children about recycling. These teachers and children then become influencers in their homes and communities. In fact, parents of children in Recycle Rally reported not only bringing their containers to the school drop off-site but also increasing recycling of other materials in their homes. Through this program we have learned about behavior change, including the success of incentives such as rewards to drive change, and the benefits of ongoing education and sustained physical locations to collect containers. Nearly 6,000 schools – including 4,000 schools currently enrolled – have participated in Recycle Rally over the past nine years to collect more than 320 million plastic bottles and aluminium cans.

In 2018, we began open-sourcing all of our [Recycle Rally resources](#) to the general public instead of making them exclusive to Recycle Rally participants. We have done so to enable educators, parents, and other community members to benefit from the tools we have created over the past eight years, including how to start a green team, how to host a recycling collection drive, and other tools to advertise and promote recycling.

2011-2012: Targeting “on-the-go” recycling

Recycle Rally showed the value of sustained physical locations but also reinforced the concern that many containers do not get recycled when consumers are away from home and work, often resorting to throwing bottles into the nearest convenient trash can. To improve access to recycling on-the-go and help reinforce recycling behavior throughout a person’s day, in 2011 PepsiCo launched pilot programs to test open-space recycling in partnership with local municipalities. Our intent with this program was to partner with the municipality to install recycling bins in public spaces. Since the program launch in 2011, we have deployed 754 bins in 11 cities across the U.S. and have collected more than 250,000 pounds of recyclables. We plan to engage more municipalities in the future, especially those in communities that have low access to recycling.

In 2012 we saw an opportunity to test an innovative on-the-go recycling effort and partnered with a few key customers in the convenience store category to leverage our delivery routes as haulers for collected cans and bottles. When a truck delivered product, it then loaded back up with containers collected at the site to be delivered to a recycling facility. This program offered integrated efficiency and scale due to our network of facilities across the country. Unfortunately, costs soared due to labor and resource constraints. The program continues in key markets such as Tulsa and Kansas City, but we haven’t found a way to take it to scale. Instead, we have looked to leverage partnerships with groups that focus on infrastructure to increase access to recycling both on-the-go and at home.

2014: Investing in recycling infrastructure and reaching new audiences

In 2014, we became a founding member of the Closed Loop Fund, which is seeking to invest \$100 million by 2020 to raise recycling rates in the U.S., including improved curbside recycling infrastructure and materials processing. To date, the fund has invested in 17 projects across the U.S. and Canada. These investments range from a project in Nebraska with the state’s largest full-service recycler returning more than 120,000 tons of recyclables to the supply chain to a project with the City of Memphis to introduce universal curbside recycling to residents, improving access to more than 100,000 households, recovering more than 160,000 tons of recyclables, and saving the city more than \$4 million in landfill tipping fees. Since 2014, PepsiCo has invested \$3 million in the fund.

Well performing recycling infrastructure is crucial to raise recycling rates, but consumers also need to understand how and why they should recycle. To this end, PepsiCo pursued partnerships with two NGOs in an effort to inspire increased recycling driven by positive impact messages. One partnership with The Nature Conservancy (“Recycle for Nature”) and another with Entrepreneurship Bootcamp for Veterans (“Recycle for Veterans”) were established with the intent of mobilizing these groups’ core audiences to recycle. While the programs provided additional resources for our partners, the recycling message became diluted amidst the core messages of the groups and failed to make a discernable impact on recycling. An important lesson is to work with partners who have a singular focus on recycling instead of it being secondary objective. For example, we continue to partner with and fund Keep America Beautiful affiliates nationally, such as Keep Oklahoma Beautiful to increase awareness of PepsiCo recycling programs and recycling in general.

2015-2016: Leveraging events and product labels and setting more ambitious goals

Building on successful recycling activations at large arena events like concerts and sports matches, PepsiCo created a program to integrate recycling in our event activations in North America. At PepsiCo product sampling events, staff are trained to talk about recycling and encourage consumers to throw their empty bottles and cans into the recycling bins provided. This was implemented business wide in 2015. Success in these types of activations led to a partnership with the NFL during Super Bowl LII in Minneapolis, Minnesota. [Rush2Recycle](#) engaged fans both inside the stadium and nationwide through a green ambassador program and by sharing tips and encouraging recycling at Super Bowl parties through the [Rush2Recycle](#) webpage. With a 91 percent waste diversion rate, Super Bowl 2018 became the first zero waste Super Bowl⁶, diverting nearly 63 tons of game day waste from landfills.⁷

⁶ “Zero waste” refers to the productive reuse, recycling or composting of at least 90% of all gameday solid, non-hazardous waste, a commonly recognized zero-waste certification rate.

⁷ All gameday waste recovery calculations provided by NFL & venue management company SMG following review of weight tickets from waste hauling scales.

To further inform consumers about recycling, in 2016 we adopted the [How2Recycle](#) label on select Tropicana and Quaker products. How2Recycle is a simple on-pack logo indicating concisely how to recycle each component of a package, with additional information on its website about local recycling resources and consumer education videos. We are in the process of adding the label to more of our products to increase consumer awareness about recycling.

In part because U.S. recycling rates were not increasing, it was clear that PepsiCo needed a more ambitious effort to underpin our long-term vision on sustainable packaging. So, in 2016, PepsiCo updated its sustainability strategy and launched our Performance with Purpose 2025 Agenda. We developed a more specific and integrated set of goals looking out to 2025 and built to improve recycling, specifically:

1. Strive to design 100 percent of our packaging to be recyclable, compostable or biodegradable,
2. Strive to use 25 percent recycled plastic content by collaborating with our suppliers, helping to increase consumer education, fostering cross-industry and public-private partnerships, and advocating for improved recycling infrastructure and regulatory reform, all of which are required to realize our ambition, and
3. In partnership with the PepsiCo Foundation, work to increase recycling rates.

2018: Investing in curbside collection and innovation

After setting our 2025 goals, we quickly set about looking for investment opportunities in the U.S., and in 2018 we made a \$10 million investment in The Recycling Partnership (an organization PepsiCo has been a funding member of since 2016) to launch “[All in On Recycling](#),” an industry-wide challenge to raise \$25 million to improve recycling for 25 million families across the country, while supporting a circular economy, simplifying recycling and creating stronger, cleaner communities. In addition to contributions from other corporations, the more than 2,800 communities that participate in the initiative are expected to triple the collective investment, catalyzing roughly \$75 million in municipal funding, and bringing the total amount of support to \$100 million. Since its inception in 2014, TRP has successfully supported 583 communities, placed 407,000 bins at curbsides, and invested more than \$29 million in recycling infrastructure to divert 115 million pounds of recyclables from landfills. PepsiCo’s recent investment will further efforts to expand access to curbside recycling across the U.S. For example a project was recently announced for a curbside recycling expansion and improvement project in [Iowa City](#). It is expected to deliver new recycling bins to Iowa City’s 16,000 homes with curbside access and deliver a robust public education campaign.

As part of our effort to move towards 100 percent recyclable, compostable, or biodegradable for our packaging, we successfully converted non-recyclable shrink sleeves on all 89- and 118-ounce Tropicana labels. Learnings from these projects will be critical in our efforts to transition our global beverage portfolio to be 100 percent recyclable, compostable, or biodegradable. Additionally, in 2018 PepsiCo joined [The NaturALL Bottle Alliance](#), a research consortium with consumer packaged goods industry leaders and a bio-based materials development company, [Origin Materials](#), to accelerate the development of innovative packaging solutions made with sustainable and renewable resources, including post-consumer cardboard, thus creating additional end market demand for this material.

To support our effort to reach 25 percent recycled content in our products, in 2018 PepsiCo entered into a multi-year supply agreement with Loop™ Industries to purchase production capacity from Loop’s joint venture facility in the U.S. and incorporate Loop™ PET plastic, which is 100 percent recycled material, into our product packaging by mid-2020. Loop’s transformational chemical recycling technology allows now low value plastics to be diverted, recovered and recycled continuously into new, virgin-quality plastic. This means that plastic bottles and packaging of any color, transparency or condition, as well as carpet, clothing and other polyester textiles that may contain colors, dyes or additives, and even ocean plastics that have been degraded by sun and salt can be converted into food-grade packaging. This recycled plastic will make an important contribution to accelerating PepsiCo’s progress towards our 2025 goal to use 25 percent recycled content in our plastic packaging.

Looking Ahead

Despite the significant initiatives and work PepsiCo has undertaken over more than a decade to increase recycling, we are not satisfied that recycling rates in the U.S. are where they need to be. Although MSW generation per capita in the U.S. has leveled off, total MSW generation continues to

rise⁸, and the use of materials such as plastics is expected to grow.⁹ Meanwhile, recycling rates are not keeping up, and the market for recycled material such as recycled PET (rPET) – an important type of plastic – is constrained by the ability of suppliers to compete with virgin material prices, so we need better solutions that drive efficiencies throughout the recycling process, improve the cost structure, and enhance the value of the material.¹⁰

PepsiCo is committed to improving U.S. recycling rates because it's good for our business, important to our customers and consumers, and consistent with our vision and goals for sustainability. Our approach will continue to focus on an integrated set of key levers to lift recycling, including:

- **Simplified materials:** PepsiCo will continue to work on sustainable packaging design and eliminating recycling disrupters, e.g., continuing our work to convert all labeling to recycle-friendly labels, which helps recyclers with managing their sorting operations and eliminates the cost of handling problematic materials.
- **Strong end markets for recycled materials:** PepsiCo will support end markets by using more recycled plastic in our packaging, particularly rPET, which sends a signal to companies that collect and process recycling that there is demand for the material and a justification to invest in better infrastructure. To this end, we are working through the qualification of new rPET suppliers and extension of current rPET supplier approvals.
- **Greater access to recycling:** People cannot or will not recycle if access is limited or inconvenient. Through PepsiCo Recycling, The Recycling Partnership and other programs, we will continue to expand access and initiate fresh solutions to help people recycle more at home and while they are on the go.
- **Change the way people think about recycling:** In addition to continuing the recycling education work already underway, we will look to leverage our skills in marketing, advertising and consumer insights to foster greater understanding and enthusiasm for recycling and its positive impact on the environment.
- **Bring more companies to the table:** No single company can move national recycling rates on its own. We will build on our work through PepsiCo Recycling, The Recycling Partnership, Closed Loop Fund and other collaborations to catalyze new partnerships and encourage others to join in this effort. We will also work through our trade associations, such as ABA, as well as EPA's emerging program to help foster national coordinated action.
- **Innovation:** Like all industries, recycling can benefit from new technologies and commercial practices. Relying on our company's innovative spirit and capabilities, and building on our work with Loop™ Industries, Origin Materials and other innovators, PepsiCo will leverage its size and scale to help introduce and commercialize new ideas and technologies to improve recycling.
- **Working collaboratively with policy makers:** PepsiCo recognizes that policy makers are also looking for solutions to more effectively address recycling and litter, especially marine plastics, while promoting the efficient use of valuable resources. In addition to the broad set of actions and investments we are making on sustainable packaging, we have adopted a proactive and pragmatic stance in our discussions with policy makers. We have partnered with government and made significant investments to support recycling collection programs in the U.S. and around the world. If a policy proposal is broad based, delivers strong environmental outcomes, provides incentives for sustainability and gives us a seat at the table in designing and implementing programs, then we want to be a part of the process.

At the same time, local and federal government agencies have to come to the table in a much bigger way to increase recycling rates in the U.S. Public funding for curbside

recycling programs should be considered alongside other positive policy tools to help put in place the infrastructure for recycling systems across the country. Additionally, we believe that the recycling industry should be viewed by governments as a vital opportunity for clean technology investment, economic growth and jobs. In addition to the investments that PepsiCo and other companies make in research and development, purchasing recycled content, consumer education, and financial contributions to

⁸ US EPA. [National Overview: Facts and Figures on Materials, Wastes and Recycling](#). EPA web site.

⁹ New Plastics Economy. [Rethinking the Future of Plastics](#). 2016.

¹⁰ Closed Loop Fund. [Cleaning the rPET Stream: How we scale post-consumer recycled PET in the US](#). 2017.

improving recycling collection, we encourage policy makers to support the industry through public funding and incentives that support collection of post-consumer material, expand and modernize processing capacity, use more recycled material in infrastructure projects, promote greater private-sector investment, and help inform consumers on effective recycling practices.

We signed a national pledge along with partners across the supply chain to work with the U.S. EPA to develop a national strategy on recycling rates. The strategy will be based on four action areas: enhance recycling infrastructure, create new markets for recycled materials, improve public education regarding recycling, and enhance measurement. Specific work plans under the program will be developed over the course of 2019. In addition, PepsiCo has supported local and state policies that enhance recycling in a broad-based manner.

We will carry our pro-recycling message in all of our advocacy work, including with trade associations as well as other groups with which we engage such as the U.S. Conference of Mayors, National Association of Counties and National Conference of State Legislatures.

PepsiCo is firmly committed to being a leading force in the industry-wide push for better recycling and sustainable packaging in the U.S. and believe our actions have had and will continue to have a meaningful impact. For up-to-date information on all of PepsiCo's work on sustainable packaging, please visit www.pepsico.com/sustainability/packaging.