People creating a better tomorrow.

2018 SUSTAINABILITY REPORT

GRAHAM PACKAGING COMPANY

Table of Contents

Message From Mike King

GRAHAM PACKAGING CEO

For years, plastic has played a vital role in keeping consumer goods safe. It extends shelf life, preserves food, prevents product loss and even childproofs household and pharmaceutical products. However, we understand the realities of plastic packaging and the challenges our industry faces moving forward.

With these new challenges, we've found a new drive — one that's pushed us to take a closer look at our business in terms of sustainability, design innovations and leadership. In this report, we'll detail Graham Packaging as it operates today, as well as our vision for a more sustainable future.

Part of that vision is the belief that preserving our planet should be a shared, global effort, and we realize that we need to be a major contributor to that effort. We started by signing the Ellen MacArthur Foundation's New Plastics Economy Global Commitment, pledging that our full line of packaging will be recyclable or reusable by 2025. We've also joined the Department of Energy's Better Plants Program with plans to reduce our energy usage by at least 25% over the next 10 years. As we look ahead to 2025, we will continue to implement sustainability programs and find opportunities to make a lasting contribution to the betterment of our planet.

But while these are positive steps, formal commitments aren't the only way we're showing progress. Our team members are partnering with our customers to help them achieve their sustainability goals for 2025 and beyond — goals that include exploring alternative solutions like bio-based resin and developing strategies to minimize ocean-bound plastic. In the short term, we're focused on three primary goals that directly impact our customers: increasing post-consumer resin content in our bottles, improving recyclability in all categories and decreasing our carbon footprint.

It's this spirit of collaborative, creative problem-solving that has always defined Graham Packaging. For more than 50 years, we've made plastic packaging for beloved consumer brands, from juice and ketchup to cleaning products and automotive lubricants. But we recognize that to remain successful, we must evolve.

Together with our customers and suppliers, we will continue to refine our processes and products. And while there are still barriers to overcome, our team is steadfast in its commitment to bring sustainable packaging solutions to the markets we serve around the world.

We're optimistic about the future, and we hope you are, too. We hope you'll join us on our ongoing mission to preserve our planet for future generations.

Mike King, Chief Executive Officer

Graham Packaging

Founded more than 50 years ago, Graham Packaging is a global packaging company dedicated to the design and manufacturing of environmentally friendly packaging solutions.

Our company started with the design of the first plastic motor oil container and has since expanded into other packaging categories, including food and beverage, personal care, household and healthcare. We work with Fortune 500 companies, as well as small independent businesses, to create one-of-a-kind packaging solutions.

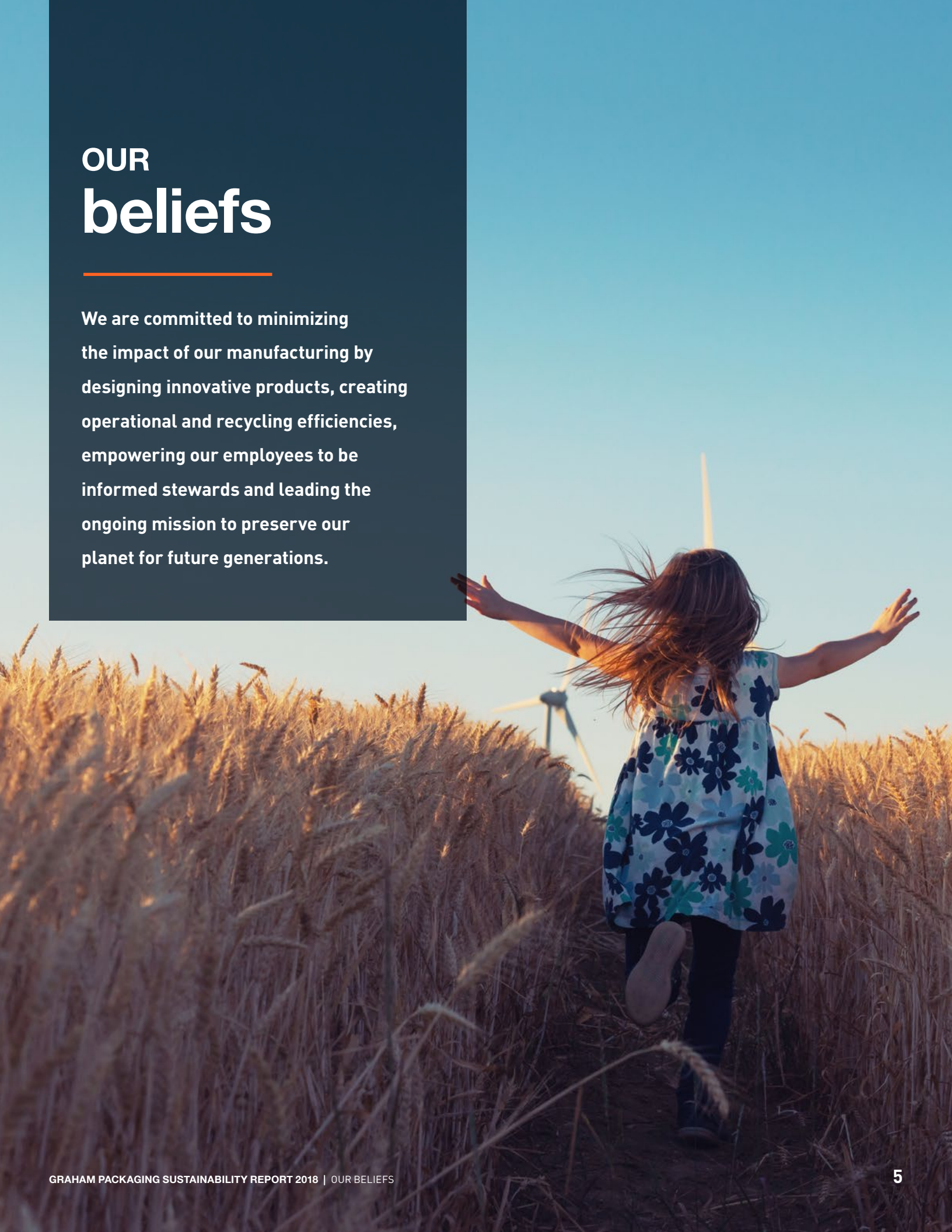
Headquartered in Lancaster, Pennsylvania, with our flagship manufacturing facility in nearby York, Pennsylvania, we produce more than 16 billion container units annually at almost 70 plants in North America, Asia, Europe and South America.

In 2011, we were acquired by Reynolds Group Holdings, a leading global manufacturer and supplier of consumer food and beverage packaging and storage products.

At every Graham facility, you'll have access to a dedicated team of designers, engineers and other packaging professionals who are obsessed with solving the industry's biggest packaging challenges. We're confident that through close collaboration with our customers and manufacturing partners, we can bring stability, innovation and customizable services to our ever-changing industry.

OUR beliefs

We are committed to minimizing the impact of our manufacturing by designing innovative products, creating operational and recycling efficiencies, empowering our employees to be informed stewards and leading the ongoing mission to preserve our planet for future generations.



WHAT WE DO

Building on a Legacy

We have a long history of providing environmentally friendly packaging solutions to our customers. But to remain the partner of choice, we must continuously evolve, keeping social, environmental and economic sustainability at the forefront of our daily lives.

In our drive for excellence, we have made sustainability a top priority, and we look at everything we do through that lens. When developing a new product, we balance the delivery of a world-class, profitable solution for our customers with the creation of a product that will have the lowest environmental impact. When building our team, we treat every interaction as an opportunity for employee development and an investment in our future.

We believe that every one of us is part of something bigger — from our families and communities to wider society and the global environment in which we live. These relationships are interconnected, and any impact on the environment has the potential to affect each of us today, tomorrow and in the future.

So, as a packaging company — and more importantly, as human beings — we must consider our planet's future in everything we do, every day. Whether we're shaping a bottle, contracting with a customer, sourcing a new resin or hiring a new employee, we believe it's an investment in our future and the future of our planet.

> OUR MISSION IS TO BE AN INDUSTRY-LEADING SOLUTIONS PROVIDER FOR SUSTAINABLE PACKAGING.

NEW OPPORTUNITIES

Creating a Circular Economy

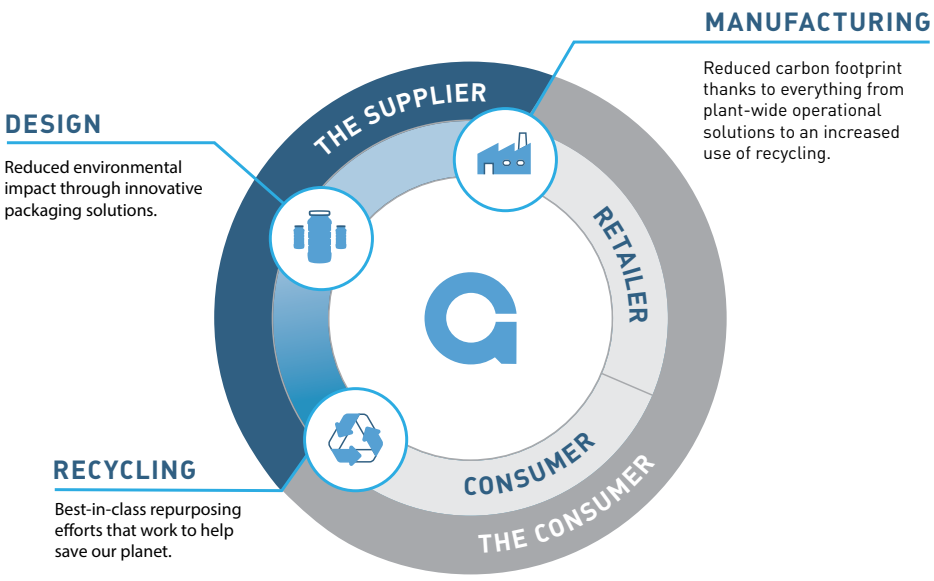
With the technology available today, we can make a positive global impact both socially and environmentally.

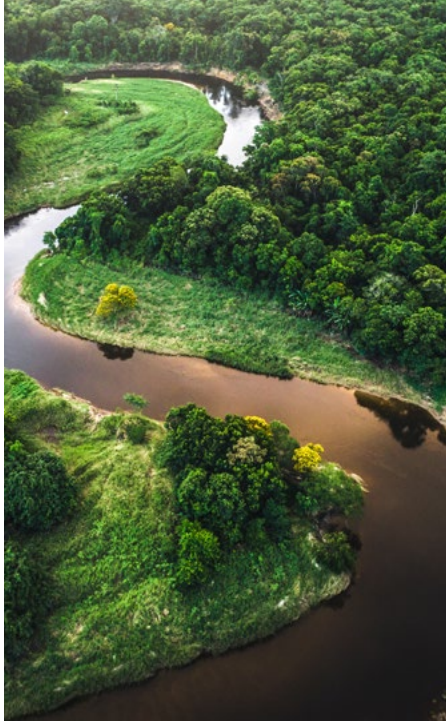
Our packaging already protects and preserves our customers' products. Now, we must take a step forward to consider how it can protect and preserve our planet. Knowing the potential impact our operations and products may have on today's environment and that of future generations, we are focused on being part of a broader solution for our employees, customers and communities.

We acknowledge the need for a circular economy. To be part of the solution, we have embraced the idea that a responsible company must exist and grow in an environmentally, socially and economically sustainable way. We build success by being accountable for bridging the gap between profitability and the ever-changing needs of our planet.

In the face of today's challenges, we believe in the relevance of a circular economy and understand that the best outcome for plastics is the reuse of this valuable, finite resource. Therefore, our first — and most important — contribution to the circular economy is to collect and reuse bottles that exist today through vigorous recycling efforts. We're also committed to working with suppliers and customers to test and validate chemically recycled and bio-based plastics. We can use these resources to build new packages, both to further preserve nonrenewable resources and to support a circular economy.

However, there are bigger steps to be taken on this long, evolving journey. We need to help educate the public on how we can overcome barriers to recycling and push for solutions, understanding that without developed infrastructure and government support, it is up to us to look for the best possible environmental outcomes.





RESPONSIBLE GROWTH

Focusing on Accountability

Our responsibility to our planet and our communities exists in three intertwined pillars: social, environmental and economic opportunities that we must leverage to carry out our mission. Each of these pillars is itself critical and important, but combined, they underpin the very basis of a sustainable society and planet.

ECONOMIC

Design for Recyclability
Use shapes, process technology and design technology to promote recyclability, advocate lightweighting and create functional features that minimize the environmental impact of our packaging

Innovation
Explore new technologies to reduce or eliminate barriers to recyclability, chemically recycled plastics and bio-based plastics

Efficiency
Continuously improve our operations by reducing our carbon footprint, while developing operational initiatives that promote more efficient and environmentally responsible outcomes

Freight Solutions
Explore freight initiatives that limit greenhouse gases by reducing the number of trucks and trains needed to move our products and material

ENVIRONMENTAL

Recycled Content
Push the boundaries on recycled plastic content in our products

Advocacy
Lead the ongoing environmental dialogue on plastic packaging and be a constant advocate to increase the recycling infrastructure

Partnership
Deliver on customers' sustainability goals, while helping customers and suppliers reduce their environmental footprint

Reduced Carbon Footprint
Work across our organization to minimize our energy and water usage, as well as reduce and eventually eliminate our waste to landfill

SOCIAL

Safety
Maintain and improve on our world-class safety record

Employee Growth
Support career development, advancement and work-life balance

Diversity
Promote inclusion and diversity in our team

Integrity
Comply with local laws and regulations, maintaining the highest ethical standards

Education
Work to educate our customers, suppliers, employees and the public on the environmental benefits of plastics, and on product recyclability and how to recycle

We will continually reexamine this mission and challenge ourselves to produce concrete and achievable solutions that advance our industry, grow our business and better our planet. As we move forward, we will continue to value our people, honor our commitments, embrace the highest standards and act with integrity in all that we do.

Core Values

VALUE OUR PEOPLE

Create a safe environment for our team above all. Build our organization around a diverse group of innovative people who want to make a positive difference and create value for their customers. Identify, promote, invest in and reward those who do.

HONOR OUR COMMITMENTS

Act with integrity. Earn the trust of our partners both inside and outside the company. Do what we say we will do and deliver what we commit to deliver.

BE THE PARTNER OF CHOICE

Strive to be a "destination company," where people want to work, with whom customers and suppliers want to do business. Be proud, contributing members of the communities where we operate.

DRIVE FOR EXCELLENCE

Hold ourselves to the highest standards and never be complacent. Strive for continuous improvement, learning from our mistakes and the mistakes of others. Add value in everything we do.

OUR people

Collaborative. Creative. Committed. Our organization is made up of a diverse group of people who leverage these key attributes to make a positive difference in the workplace and in their communities. By building strong relationships and creating value for our customers through years of experience, our people embody the innovative spirit that's inherent to Graham Packaging.

COMMUNITY INVOLVEMENT

Making a Local Impact

As a global company, we're fortunate to be able to make an impact in many diverse communities. To further these initiatives in 2019, we're creating sustainability teams that will focus on community outreach to promote recycling, reduced energy usage and sustainable living. See what our teams have been up to recently to help their local communities.

Mexicali Plant, Mexico
- Collects food and water for people in need during earthquakes

Belford Roxo Plant, Brazil
- Raised 440 pounds of food and put together 75 gifts for children in a nearby orphanage

Tlalnepantla Plant, Mexico
- Donates pieces of outdated equipment to Fidel Velazquez School for low-income students seeking technical training

Corporate Office, Lancaster PA
- Raised $3,100 for the Children's Miracle Network in honor of the son of a Graham employee who was born with complex medical needs
- Collected clothing and food items for homeless veterans in the community

Mason Plant, Ohio
- Participates in the annual Shared Harvest Group food drive to help those in the local community, donating 3,089 pounds of food, which created 2,574 meals for those in need in 2017
- Participates in an annual blood drive
- Donates used printer cartridges to local libraries

GPC International
- Participated in a tree-planting activity in Portugal during our kickoff meeting
- Encouraged employees to commute to work on e-bikes for Earth Day

GPC International, Poland
- Challenges employees to fill up a Volkswagen Transporter for a local food bank

Tolleson Plant, Arizona
- Collects food for St. Mary's Food Bank

Houston Plant, Texas
- Has partnered with the Houston Fire Department's Operation Stocking Stuffer for the past two years, and in 2018, their donations helped the fire department collect over 45,000 toys for underprivileged children

Elwood Plant, Indiana
- Committed to donating $10,000 toward a 5K and chili cook-off yearly through our partnership with Red Gold Ketchup

TRAINING & DEVELOPMENT

Focusing on Growth

We expect our employees to go above and beyond to create value for our customers, and in turn, we want to create value for them. By identifying, promoting and investing in employees who step up, we've built a culture that rewards hard work and encourages our people to grow their skills.

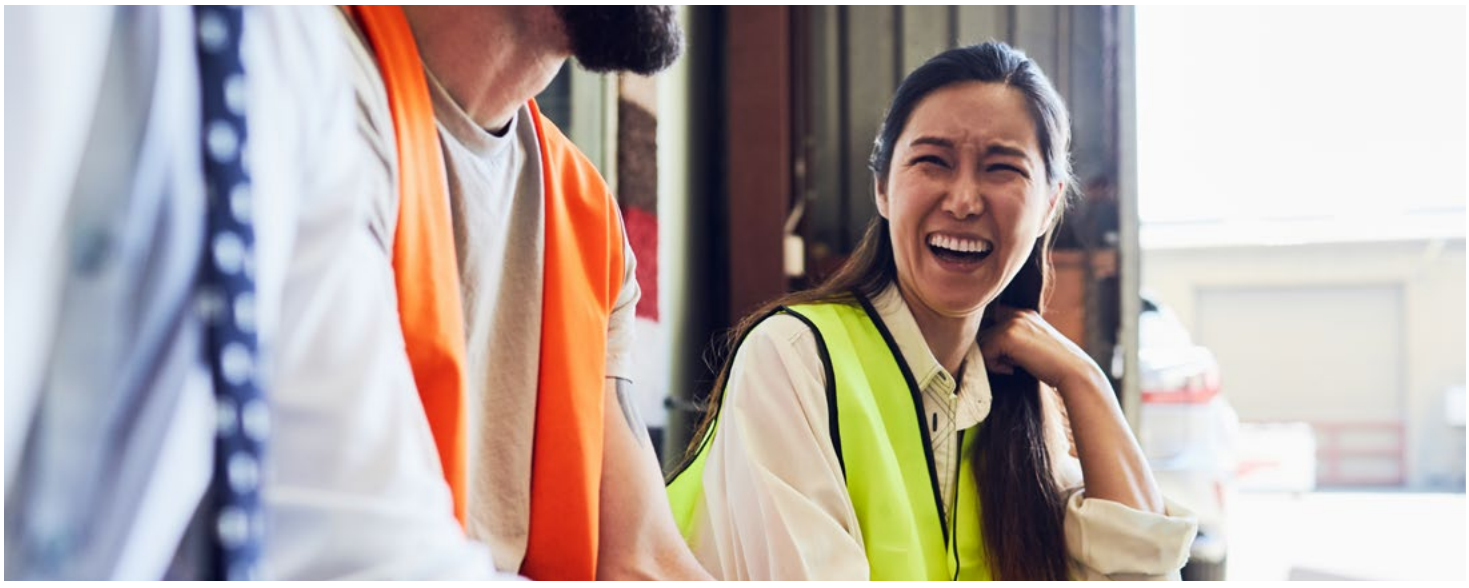
Pay-for-Skills Program

In 2018, we began a cutting-edge Pay-for-Skills program for our hourly employees. Beginning at our Bowling Green and Altavista facilities, a cross-functional team of Graham Packaging leaders identified the specific tasks associated with plant hourly employment. From there, they assessed the skills needed to perform each task and determined the progress required to be successful at each one.

The benefits of the Pay-for-Skills program are twofold. For our employees, it allows them to take their career development into their own hands. They are rewarded for their motivation to complete training and acquire/validate their skills.

For our company, it fosters an environment of engaged management and helps us further develop our talented employees. This program also gives us a competitive advantage when recruiting new talent at our many locations.

The concept of Pay-for-Skills is based on the modern participative management philosophy that today's employees can't be recruited, trained and retained by traditional time-based compensation systems. Rewarding today's talented candidates requires a progressive and intrinsic approach that rewards people based on their individual talent and skills acquisition, not how long they've been employed.



SAP Litmos

Litmos Learning Management System

To help our employees learn and grow, we needed to find a world-class e-learning management system that could maximize engagement and retention, satisfy facility safety initiatives and ensure legal and regulatory compliance. Plus, as a global company, we needed a platform that allowed our employees around the world to take courses in many different languages. We selected Litmos as the best option for our organization.

What we can do with Litmos:

- Use the online course builder to create training materials
- Schedule and track classroom training sessions
- Develop learning paths, from multiple courses to group training sessions
- Provide assessment to benchmark knowledge retention
- Get real-time notifications from teams and learners
- Review performance and gain insight onto training impacts with reports and dashboards
- Provide surveys to employees

FrontLine LEADERSHIP

FrontLine Leadership Development and Fundamentals

We believe that a company is only as effective as its leadership. So, we follow the general rule of focusing 70% of our leaders' development on job-related experiences, 20% on interactions with others and 10% on formal education.

Our FrontLine Leadership program falls into the formal education category and consists of an instructor-led course or a three-day session with subject matter experts within our organization. This program provides all plant leaders who are new to their role or new to Graham with the opportunity to develop a deeper understanding of their role, including how to drive standardization, reduce cost, build trust and encourage involvement at all levels of our business.

As a result of their participation in this program, our plant leaders have become more effective in their roles. They've built motivating relationships with their teams, while actively dealing with personnel challenges like stagnation and turnover.

Ethics & Compliance

Honoring our commitments and acting with integrity are two principles that are built into our company's core values. We know we must earn the trust of our partners, both inside and outside our company, and to do that, we must comply with all local laws and regulations while maintaining the highest ethical standards.

We have a well-developed Ethics & Compliance Program embedded in our company culture and supported by our Litmos e-learning platform. We use both Litmos and in-person training to train all relevant employees on our code of conduct, fraud policies and other specific training topics, like anti-corruption, anti-bribery, antitrust and privacy. By offering this standardized training, we can be sure every employee receives the same information. We also use this platform to periodically reinforce our compliance focus.

In addition to our Litmos platform, we have an ethics hotline available, which can be accessed globally in the languages of the countries where we operate. The hotline is accessible by phone or online and provides a platform for employees and third parties to report any potential ethics or compliance concerns. Those concerns are then fed into our case management system and thoroughly investigated.

We take ethics and compliance violations seriously, and we strive to handle any breach of conduct with the utmost care and professionalism.

OUR products

The packaging we make helps popular brands deliver their goods in a safe, convenient way. From highly creative designs to innovative childproofing options and everything in between, our team will envision and produce a customized solution that exceeds expectations.

PLASTIC PACKAGING

Using Our Resources Responsibly

In recent years, plastic packaging, particularly single-use plastic, has received negative attention in traditional media and on social media. Much of the conversation has been centered around the amount of plastic in the ocean, the growing number of cities banning or taxing single-use plastics and what steps companies are taking to reduce their environmental impact. However, when used responsibly, plastic packaging can lead to reduced pollution and lower energy usage than other forms of packaging available today.

Glass, for example, has been considered as an alternative, but the energy involved in producing glass, as well as the freight and fuel costs involved with shipping such a heavy material, has been a deterrent. Not to mention, glass packaging can lead to breakage, which results in an increase in production downtime and product loss.

It's important to note that some plastics are easier to recycle than others. PET and HDPE are two of the most common, easily recycled plastics. Both PET and HDPE are lightweight, durable and offer design flexibility not found in other plastics. Plus, because of their reduced weight and size, PET and HDPE products can be transported in higher volumes on fewer trucks.

The use of recyclable and reusable plastic packaging helps create a circular economy where valuable resources are conserved rather than wasted. By working together to preserve these finite resources, we can continue to enjoy the many benefits of plastic packaging, including safer products, more convenience, lower prices, reduced energy use and less product loss.

Polyethylene Terephthalate (PET)

PET is widely used for packaging food and beverages, like juice, water and salad dressings, as well as personal care and cleaning items like hand soap and spray cleaners. It's also an approved material for use in pharmaceutical and medical applications. PET won't react with foods or drugs and is resistant to the growth of microorganisms and biological degradation.

Though clear and lightweight, PET is also strong enough to endure shipping without danger of breakage. Because it's both lightweight and strong, it results in lower transportation costs and more energy efficiency for facilities that produce it. Thus, it's considered more sustainable than glass, aluminum and other packaging materials.

Bottle-grade PET is one of the common plastics we use, and it's our goal that 100% of our PET packages be recycled back into bottles or be recovered for use in other plastic products. In 2018, we processed over 550 million pounds of PET resin across our global facilities.

High-density Polyethylene (HDPE)

HDPE is used in a variety of applications, from snowboards and outdoor decking to food and beverage packaging. Thanks to its high strength-to-density ratio, HDPE is ideal for packaging gallons of milk, laundry detergent and other heavy liquids. Plus, its light weight keeps transportation costs low.

This material has a high melting point, allowing it to be sterilized by boiling before being used for food and beverages. It also naturally resists mold, microorganisms, acids and even chemicals. Highly malleable, HDPE can be molded into countless creative shapes for more shelf appeal.

Bottle-grade HDPE is another common plastic we use, and it's our goal that 100% of our HDPE packages be recycled back into bottles or be recovered for use in other plastic products. In 2018, we processed over 670 million pounds of HDPE resin across our global facilities.

> IN 2018, WE PROCESSED OVER 550 MILLION POUNDS OF PET RESIN AND OVER 670 MILLION POUNDS OF HDPE RESIN ACROSS OUR GLOBAL FACILITIES.

SPOTLIGHT ON
Food Waste

Every year, approximately one-third of all food produced in the world for human consumption is lost or wasted. In fact, when the greenhouse gas emissions from the top 20 countries in the world were compared to the emissions from overall food waste, it was found that **if food waste were its own country, it would be the third largest emitting country in the world**.[11] This large volume of waste affects not just the world's food supply, but also the supply of critical resources like water, land and energy.

While food waste may seem like a problem independent of plastic recycling, these two key issues are closely intertwined. By replacing glass and other non-durable types of packaging with rigid plastic solutions, food manufacturers and distributors can cut down on food waste due to breakage. Plastic packaging also extends the shelf life of foods that would otherwise expire.

Bio-based Resins

Bio-based resins are derived either partially or completely from renewable raw materials that undergo a chemical reaction to create a new synthetic material. They take the place of traditional resins like polyester, epoxy and polyurethane. We are continuing to research and experiment with bio-based resins that do not compete with the food chain.

Biodegradable Resins

Biodegradable resin is plastic that is actively metabolized by microorganisms like bacteria when left in the natural environment. For example, we have explored using potato starch compounded into HDPE. This unique mixture creates a new alloy-like polymeric compound that is recyclable, but for those containers that slip outside the recycling stream into the environment with microorganisms, the intention is that the entire container will 100% biodegrade. Although we've experimented with biodegradable resin, and it sounds like an ideal packaging option, there are currently several challenges with this technology.

First, many of these products are not truly biodegradable. They won't biodegrade naturally if they slip out of the waste stream into the environment. Most of these resins need special industrial facilities to process them, and these facilities are not consistently available. Even where such facilities do exist, many industrial composters won't take biodegradable plastics because of the problems they can cause, like not composting adequately, introducing contamination and hurting resale quality.

Second, the global supply chain is not yet equipped for industrial composting because most facilities can't adequately sort materials and avoid questionable products. For example, some packaging is being produced with compostable resins, but because there is still a mix of materials being used, compost facilities are refusing all these containers.[8]

And third, large-scale composting disrupts the recycling stream by promoting the degradation of plastics that would otherwise be recycled and reused. It is worth noting that biodegradability is a proper solution for packages that are not recyclable or for those that may slip out of the waste stream into the environment.

We believe that biodegradable resins are a second- or third-tier sustainability solution. Our preference is to enable virgin polymers to be used as many times as possible via recycling and through the management of our internal scrap, whether the polymer is from fossil fuels (nonrenewable) or bio-based materials (renewable).

SPOTLIGHT ON

Green Resin at Graham

About seven years ago, we partnered with a customer to create a resin made mostly of sugar cane, and we became one of the first companies to take this type of product into large-scale production. We made roughly three billion bottles using this bio-based resin, which is now widely used in the industry.

OUR initiatives

For us, sustainability is about thinking globally and acting locally. We constantly ask ourselves what we can do to make things better for our customers, our community and the world. It's clear that it will take a collective effort to preserve our planet for future generations, and we'll continue to support that effort in every way possible.

SUSTAINABILITY FACTORS

Minimizing Our Impact

We strive to be responsible, purposeful and sustainable at every level of our business. That means taking a hard look at where we are and where we want to go over the next five to 10 years. We've identified several areas of opportunity that will help us reach our sustainability goals going forward.

DESIGN FOR RECYCLABILITY

Minimize the environmental impact of our packaging through design focused on recyclability, plus lightweighting and freight optimization.

PARTNERSHIP

Partner with customers and suppliers to help them reduce their carbon footprint by advocating for on- or near-site partnerships.

RECYCLED CONTENT

Push the boundaries on how much recycled content we use in our products.

INNOVATION

Explore new technologies to reduce or eliminate barriers to recyclability, chemically recycled plastics and bio-based plastics.

EFFICIENCY

Work tirelessly to develop operational initiatives that promote more efficient and environmentally responsible outcomes.

CARBON FOOTPRINT

Work across our organization to reduce our energy and water usage, as well as reduce and eventually eliminate our waste to landfill.

THE IMPORTANCE OF RECYCLING

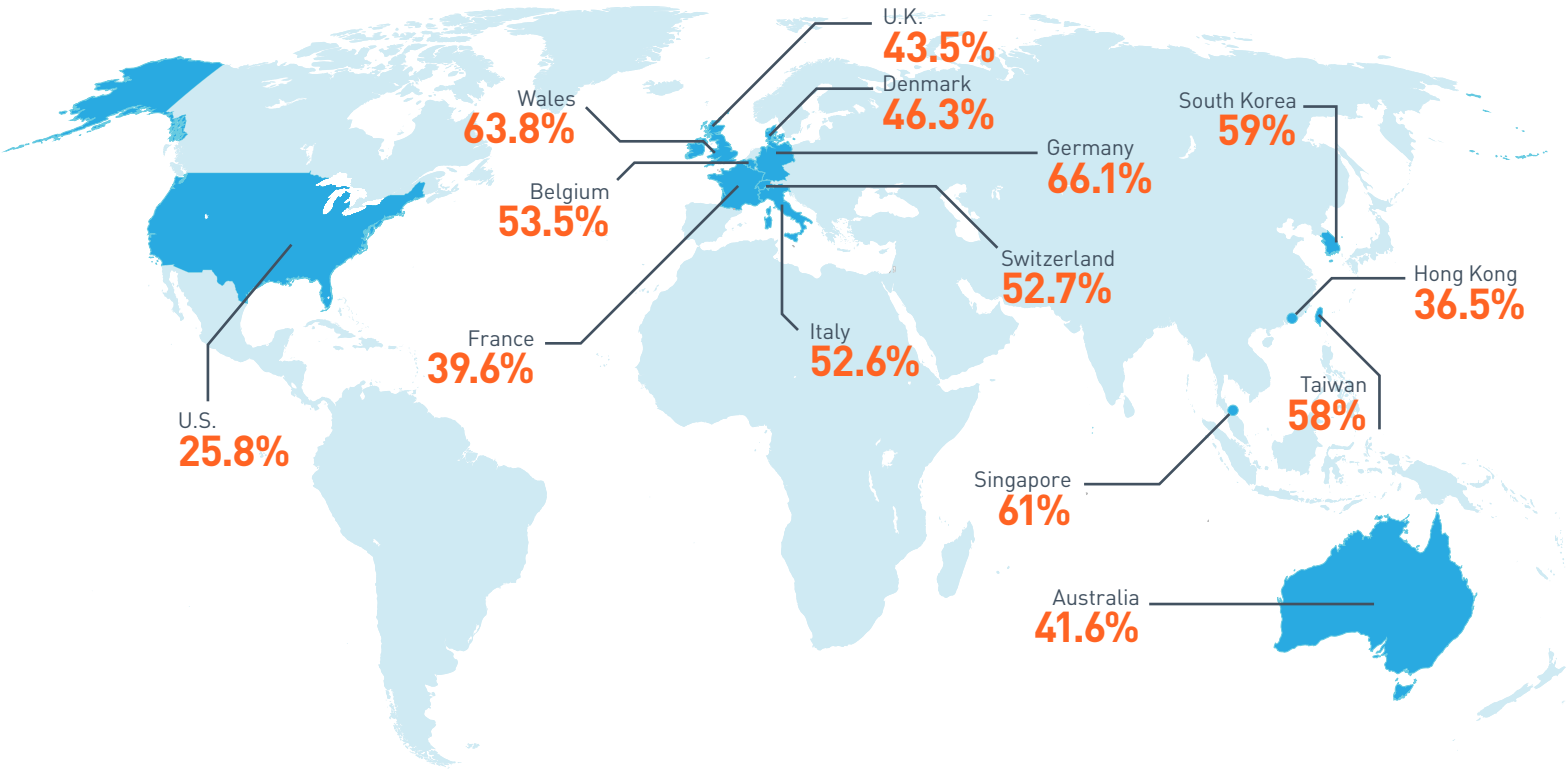
Understanding the Big Picture

The plastic boom began in the 1940s when mass-producing plastic items became necessary to support the war effort during World War II.

Since that time, roughly 9.1 billion tons of plastic have been produced across the world. Seventy-nine percent of that plastic has made its way into landfills or the natural environment, while a meager 9% has been recycled.[1]

In the face of those numbers, it's clear to see that, as a global community, we've fallen short in our efforts to preserve our planet through good recycling practices. It's time for a change, and getting better at recycling is an easy first step.

Recycling Rates Around the World*



*Global Data[2]
*U.S. Data[3]

NOTE: Data in this graphic has been gathered from several sources. Different measurement methods from country-to-country may make actual recycling rate comparisons difficult.

U.S. Recycling Metrics

Despite the U.S.'s less-than-stellar recycling record, steady improvement has been made over the last several decades. Overall, the recycling rate in the U.S. increased 27% from its early days in the 1980s through 2015. Likewise, the overall recycling rate of plastic grew steadily during the same time period, though it has dropped off slightly in recent years.[4] Today, the recycling rate for HDPE and PET, specifically, is approximately 30%.[5]

U.S. Plastic by the Numbers[4]

34.5 MILLION TONS
of plastic generated

26 MILLION TONS
of plastic landfilled

3.1 MILLION TONS
of plastic recycled

Though plastic has received negative media attention recently, many American consumers still see plastic as a modern necessity for its convenience, safety and lower price. As a general category, plastic made up 18.9% of all landfilled waste in 2015.[4] Now, imagine a world where we could reduce that number to less than 1%.

Recycling finite materials like plastic does more than just free up space in landfills. It conserves both renewable and nonrenewable resources, boosts the economy, prevents pollution, saves energy and even creates jobs. In fact, it's estimated that approximately 75,000 jobs and $3 billion in wages are generated for every 1,000 tons of plastic that's recycled.[6]

> IT'S ESTIMATED THAT APPROXIMATELY 75,000 JOBS AND $3 BILLION IN WAGES ARE GENERATED FOR EVERY 1,000 TONS OF PLASTIC THAT'S RECYCLED.

Curbside to Recyclers: The Recycling Process

The Recycling Process

The recycling process for HDPE and PET generally begins on the curb, where waste management companies pick up recyclables, like plastic, paper and glass, and transport them to municipal recycling facilities. The recyclables are then sorted into like materials. In the case of plastic, HDPE and PET are separated accordingly.

Once the HDPE and PET are separated, they are sorted further by color. Natural bottles — what consumers consider "clear" plastic — go into one pile, while colored plastic goes into another. Containers that can't be sorted go into a mixed pile with both natural and colored plastic.

After the sorting is finished, the material is shaped into bales, which can be shipped to post-consumer resin (PCR) recyclers like us. The more difficult it is to sort the material, the higher the cost of the bales. And the less consumers recycle on the front end, the less recycled plastic there is available for manufacturers to reuse.

Barriers to Recycling

Recently, both shoppers and big-box retailers have shifted their buying habits to favor sustainable packaging that is made partially or entirely of PCR.[9] While many manufacturers, like Graham, are stepping up to meet these new and growing consumer demands, there are still significant barriers at every level of the recycling process that make it difficult for consumers to recycle, and therefore, difficult for manufacturers to create sustainable packaging.

Some of the most commonly cited barriers to recycling include:

- Inconsistent collection and recycling efforts along the entire value chain
- Misinformation about effective methods for preventing pollution
- Lack of consumer understanding of what is recyclable and how to recycle it
- Little or no access to recycling and waste collection services

RECYCLED CONTENT

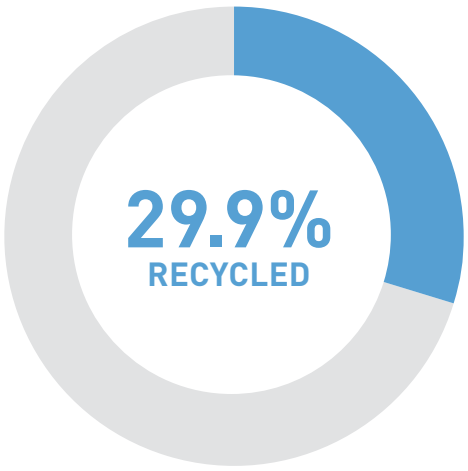
Reusing Valuable Resources

One of the best ways to keep plastic out of landfills and out of the oceans is to recycle it so it can be used to create another plastic product.

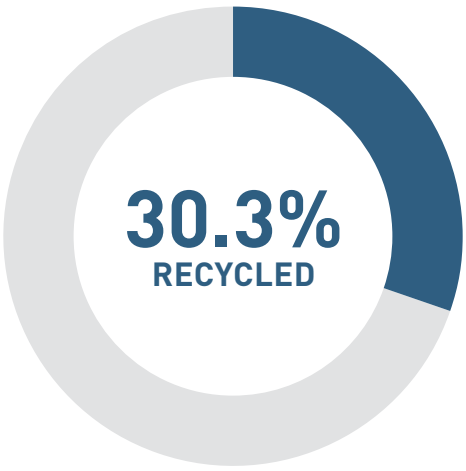
Plus, many shoppers today feel a personal responsibility to prevent plastics from negatively impacting the environment. This leads them to buy products labeled as "recyclable," "made from recycled materials" and "easier to recycle."

However, to make packaging that can truly claim it's "made from recycled materials," manufacturers need access to large volumes of recycled content. This can be difficult to find when much of the plastic produced today ends up in landfills rather than at a recycling center. That's where the circular economy comes in — as consumer recycling rates climb, so does the amount of recycled content available to manufacturers, who can then use it to make new products for consumers.

U.S. Recycling Rate of
PET Bottles and Jars[5]



U.S. Recycling Rate of
HDPE Natural Bottles[5]



Recycled Content at Graham Packaging

We have advanced technologies that allow us to make bottles with various percentages of recycled content. Our development team works with customers to determine the best way to meet their needs for recycled content. We have supplied customers with packaging containing from 10% to 100% recycled materials, and most packages we produce have some level of post-industrial recycled content that comes from our internal scrap.

rPET

Bottle-grade PET is a popular and valuable recycled material. The cost of post-consumer recycled PET (rPET) can vary widely depending on where in the process the content is sourced. It may come from scrapped bottles, flake or even reprocessed pellets, but the more consistent the color and performance of the PET, the higher the cost.

Today, we consume roughly 11 million pounds of recycled PET annually, and we expect that number to increase significantly by 2025. Our goal is that 100% of our packaging be recycled back into bottles or recovered for use in other plastic products.

rHDPE

HDPE is also a popular and valuable recycled material. We can incorporate a significant amount of recycled HDPE (rHDPE) into any bottle we make, and in 2018, we used 65 million pounds of HDPE post-consumer resin from all sources.

Forty-two million pounds of this total was sourced from our Graham Recycling Center. In addition, our plants were able to reuse 18.1 million pounds of regrind, which are rejected parts that we can reclaim. Including virgin and post-consumer resin, we consumed approximately 670 million pounds of HDPE in 2018.

> NEARLY EVERY PACKAGE WE PRODUCE CONTAINS SOME LEVEL OF RECYCLED CONTENT.

SPOTLIGHT ON

The New Plastics Economy Global Commitment

We are one of the largest plastic manufacturers to have signed the Ellen MacArthur Foundation's New Plastics Economy Global Commitment. By signing this commitment, we've pledged that all of our plastic packaging will be able to be reused, recycled or composted by 2025.

GRAHAM RECYCLING CENTER

Reducing Landfill Waste

As one of the largest plastic recycling facilities in the northeastern U.S., the Graham Recycling Center in York, Pennsylvania, recycles #2 HDPE bottles into post-consumer resin (PCR). Our facility, which began with one line in 1990 and has since grown to three lines, helps us save vast amounts of energy and natural resources by diverting hundreds of millions of pounds of plastic from landfills and substantially reducing greenhouse gas emissions.

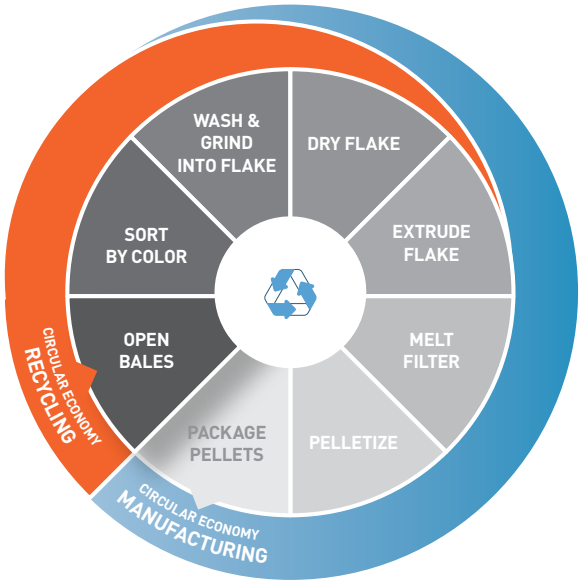
In 2018, we received material from many different vendors, including global sources, which allowed us to process 45 million pounds of post-consumer material using our best-in-class recycling methods. We also reused 18.1 million pounds of post-industrial bottle flake across all segments within our company.

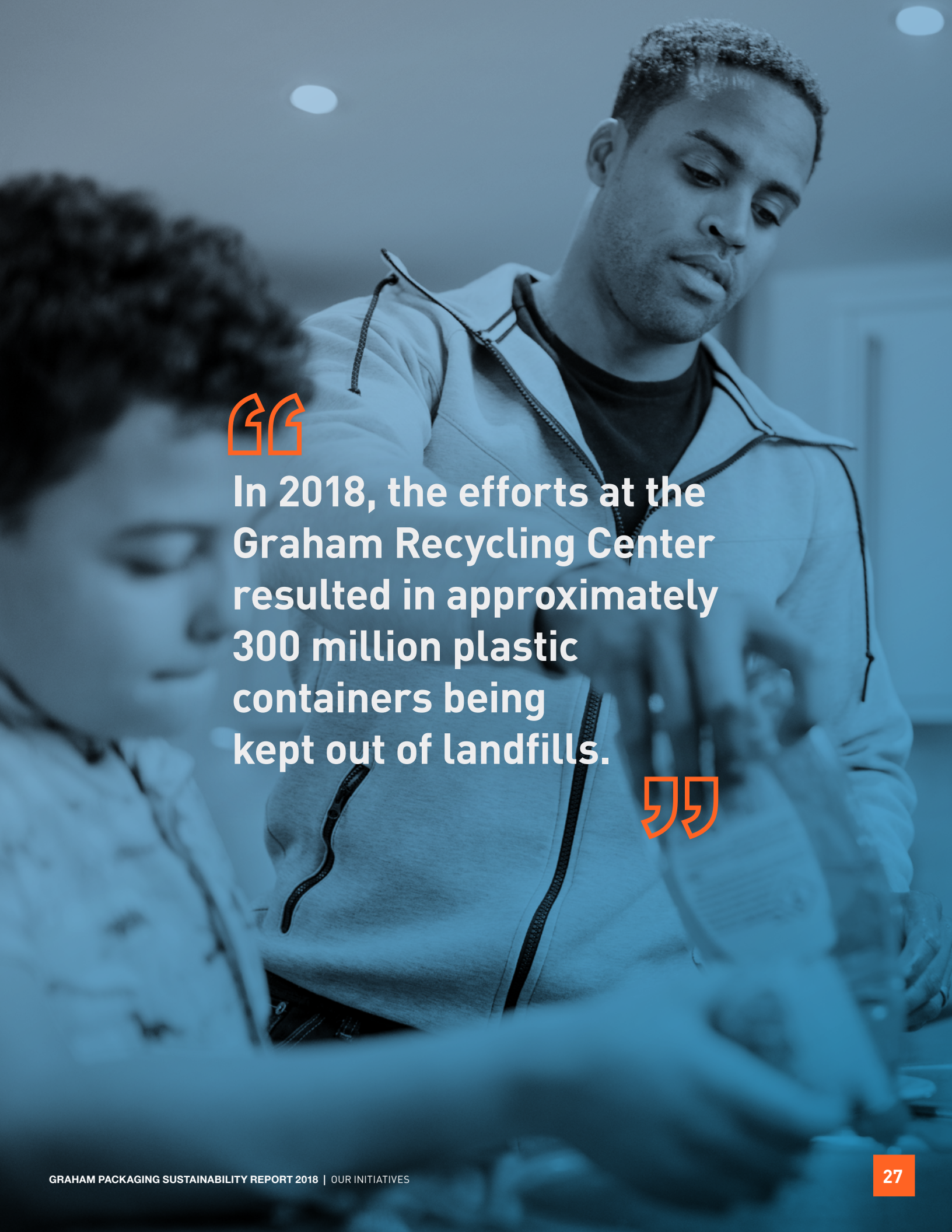
The benefits of having our own recycling center are twofold. Not only has it helped the packaging side of our business become one of the largest suppliers of bottle-grade recycled plastic containers in the world, but it's also enabled our facility to be more sustainable, contributing to our larger goal of preserving the planet for future generations.

100+ MILLION GALLONS
Process water reduction since 2014

11% ENERGY REDUCTION
Sustained energy improvement since 2014

18.1 MILLION POUNDS
Recycled material generated in 2018





> In 2018, the efforts at the Graham Recycling Center resulted in approximately 300 million plastic containers being kept out of landfills.

Our Recycling Network

In addition to our recycling center, we use a network of HDPE recyclers to meet the needs of our customers. This network enables us to adapt to fluctuations in customer and consumer demands, as well as prevent material shortages if severe weather occurs. Annually, this network enables us to use an additional 23 million pounds of recycled content and helps us minimize the impact of transportation.

The Graham Recycling Center in York, Pennsylvania, services our facilities throughout the eastern and midwestern U.S. To minimize the cost and impact of freight, we've developed strong partnerships with other major recycling operations in the southern and western U.S.

LIGHTWEIGHTING

Reducing Weight Without Impacting Performance

The cost of warehousing and shipping heavy products has become a big concern for many companies, and while shipping large volumes of product can be expensive, it can also have a negative impact on the environment.

For example, we've implemented lightweighting initiatives for both our PET and HDPE packaging that have helped to offset some of these monetary and environmental costs. Lightweighting is the process of redesigning our products to reduce the overall weight of the packaged item. This can be done by replacing glass packaging with plastic packaging, causing a significant reduction in weight, or by taking an existing plastic container and reducing its weight without impacting the performance of the container. With lightweighting and design innovation, our goal is to minimize impacts across the life cycle of a product.

Benefits of Lightweighting

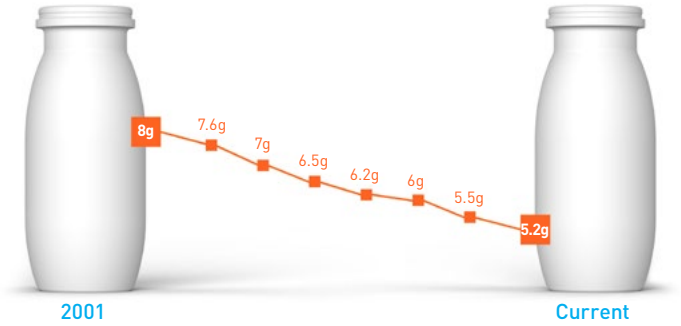
- Decreases fuel consumption with the transport of more products on fewer trucks
- Maintains the appearance and performance of the packaging while increasing design flexibility
- Reduces material use, resulting in lower energy and resource consumption
- Lowers overall carbon footprint across the entire supply chain

SPOTLIGHT ON ThermaSet®

ThermaSet is our patented heat-set process that allows PET containers to be used in challenging fill processes like hot fill, pasteurized and retort where glass is typically used. Because of its lighter weight than glass, 40% more ThermaSet PET jars can be put on a single truck. They also need less packaging and fuel during transport while being fully reusable and recyclable.

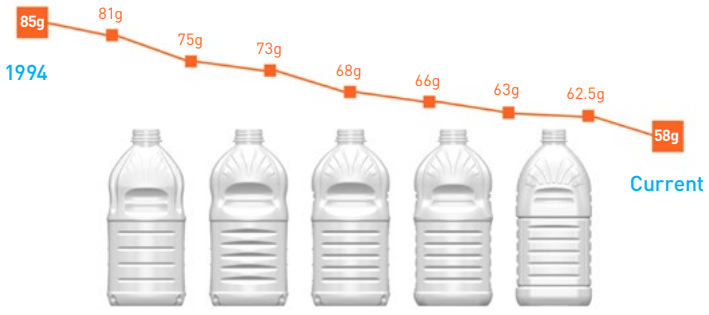
LIGHTWEIGHTING DRINKABLE YOGURT HDPE BOTTLES

35% Decrease in Weight



LIGHTWEIGHTING RECTANGULAR PET BOTTLES

31.7% Decrease in Weight



CUSTOMER COLOCATION

Reducing Carbon Footprints

One out of every three Graham plants is strategically positioned near or inside our customers' filling facilities. This allows us to reduce not only our carbon footprint, but also the carbon footprints of our customers. Customer colocation also provides value through freight savings, operational efficiency and flexible technologies.

Freight Savings

- Eliminates the cost of shipping empty bottles from Graham location to customer location
- Lets customers ship only their finished, packaged product
- Reduces inventory requirements
- Cuts down on manpower needed to ship and receive bottles multiple times

Operational Efficiency

- Delivers significant energy savings
- Expedites quality assurance process
- Promotes utilities synergy and cost-down
- Allows for the use of fully automated logistics solutions
- Minimizes impact on current operations through phased development and installation

Recycling Opportunities

- Creates potential for 100% closed-loop recycling of customer scrap
- Provides an additional source for recycled content

Flexible Technologies

- Allows for use of our latest PET technologies, which offer up to 30% weight savings when compared to glass
- Reduces carbon footprint through innovative equipment solutions
- Uses injected finish, which reduces scrap, improves seal consistency and boosts final product quality

SUCCESS STORIES

Developing More Sustainable Solutions

We're passionate about making products that make a difference. Our team works tirelessly to develop new, more sustainable packaging solutions by bringing together the right combination of industry expertise, technical skills and creative problem-solving, all while leveraging our 50-year history of innovation. From hosting live design sessions to get the look of a product just right to engineering a new production line process, we won't stop until we've exceeded expectations.

ThermaSet® as an Environmentally Responsible Alternative to Glass

ThermaSet is our patented heat-set process that allows PET containers to be used in challenging fill processes like hot fill, pasteurized and retort. This process can be completed using a container made of bottle-grade PET with no special additives that has a sustained thermal resistance of 250 degrees Fahrenheit.

Benefits

As a production solution, the ThermaSet process affords products the benefits of being packaged in plastic. It promotes longer shelf life and maintains glass-like clarity. It also works with metal lug, metal CT closures, can ends and plastic closures to fit into existing fill lines. Because ThermaSet facilitates a switch from glass to plastic, it also results in enhanced environmental benefits, including:

- Virtually eliminating breakage with shatter-resistant material
- Reducing production downtime and product loss
- Reducing weight by up to 30% for freight savings
- Using less energy to produce

To verify these benefits, we commissioned an independent research firm to conduct a life cycle assessment of 1,000 24-ounce ThermaSet PET pasta sauce jars and compare them to their glass counterparts. The goal of the study was to document the life cycle environmental impact of these jars, with special emphasis on measuring energy depletion and climate change impacts.

This study, which was peer reviewed, calculated the environmental impact of manufacturing the jars, caps and packaging materials, shipping the jars to their filling locations, filling the jars with pasta sauce, shipping the filled jars to grocery stores and disposing of unrecycled jars in landfills. It found that over multiple environmental impact categories, ThermaSet PET jars had a lower impact on the environment than glass jars.

Applications

- Baby Food
- Fresh-Cut Fruits & Vegetables
- Jelly & Preserves
- Microwaveable/Direct Serve Foods
- Pasta & Pizza Sauces
- Pickles & Relish
- Salsa & Dips

ENVIRONMENTAL INDICATOR	% REDUCTION FROM WHEN CONVERTING FROM GLASS TO PET
Energy	↓ 16%
Air Particulates	↓ 93%
Smog Emissions	↓ 55%
Carbon Footprint	↓ 38%

*Results from critically-reviewed, ISO 14044 LCA Study Comparint ThermaSet® PET jars to glass jars.

Promoting Reuse Through Texture and Lightweighting

As a leader in reusable PET production in Mexico, we have produced roughly 100 billion reusable bottles for one of our largest beverage customers. These bottles are returned and reused an average of 17 times, which saves a lot of valuable resin and energy.

Lightweighting

Our first initiative with this customer was to lightweight every bottle size they offer so that when the bottles are returned, they cost less to ship. Lighter bottles also allow trucks to carry more in one load, resulting in fewer trucks on the road.

BOTTLE SIZE	INITIAL WEIGHT	CURRENT WEIGHT	% WEIGHT REDUCTION
1.5L	106g	93g	12%
2L	127g	93g	26%
2.5L	136g	110g	19%
3L	143g	127g	11%

Texture

On average, these bottles are reused 17 times, though they're designed to be reused up to 25 times. There are several reasons why a bottle may be rejected, but the most common is scuffing on the exterior of the bottle, which lowers its shelf appeal.

Since most bottles are rejected for cosmetic reasons, we decided to explore ways to cut down on the "used" appearance of a bottle. Our proprietary solution was a texture that takes on the appearance of bubbles but helps to eliminate scratches and scuffs on areas of the bottle where they commonly occur. When tested, these textured bottles showed 75% less scuffing than nontextured bottles.

Graham texture Non-textured bottle

> SINCE MOST REUSABLE BOTTLES ARE REJECTED FOR COSMETIC REASONS, WE EXPLORED WAYS TO CUT DOWN ON THEIR "USED" APPEARANCE. WHEN TESTED, OUR TEXTURED BOTTLES SHOWED 75% LESS SCUFFING THAN NONTEXTURED BOTTLES.

OUR operations

Accountability isn't just something we talk about at Graham Packaging. It's something we practice every day. As a plastic packaging manufacturer, we have a responsibility to constantly find new ways to reduce the environmental impact of our facilities. It starts with keeping people safe. It continues when those same people believe in our mission and carry it beyond the workplace into their everyday lives.

HEALTH & SAFETY

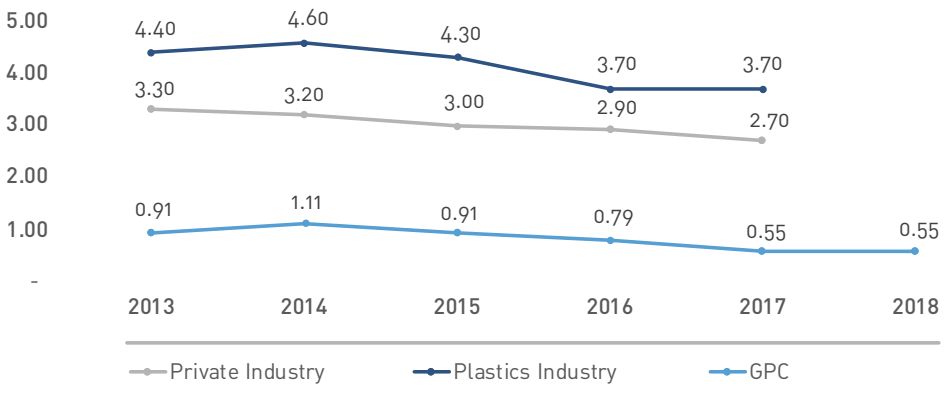
Engaging the Ones Who Matter Most

Our people are our greatest asset, and their health and welfare are of utmost importance. For us, "health and safety" isn't just a metric. It's who we are as an organization, from our employee culture to the way we conduct business. Safety is a core value — one that's more vital than cost, quality and productivity.

Our collective vision is to be the world leader in environmental health, safety and sustainability. To achieve that vision, we've transformed our company over the past six years, bringing safety into every conversation at every level of our organization. We've shifted our focus from being purely reactive to doggedly proactive. This shift requires us to continually monitor our own behavior — and the behavior of others — to ensure that we're working safely and avoiding risks.

By keeping safety top of mind, we've seen a significant decrease in recordable injuries. In fact, the rate of injuries requiring medical treatment above and beyond first aid has been reduced by 62% since 2014. Our recordable injury rate is also far below the national average for both private industry and the plastic industry in general. Aside from the most significant result of ensuring safety on the job, this reduction in injuries has also led to benefits like freeing up liability costs that can now be reinvested in our company.

Recordable Injury Rate at Graham vs. Comparable Companies*



*Source Data[10]

> WE'RE ON A JOURNEY TOWARD A "NO HARM" WORK ENVIRONMENT, AND WE WON'T BE SATISFIED UNTIL THAT GOAL IS ACHIEVED AND SUSTAINED.

Peer-to-Peer Accountability Program

With engagement comes accountability, so we view employee engagement as the biggest factor in our safety success. That's why we developed the peer-to-peer accountability program. It starts by training people to recognize risk when they see it, then it empowers them to proactively address any unsafe condition or behavior.

This program encourages every Graham employee to be accountable to themselves, to each other and to our company, which includes speaking up when they see something unsafe and having crucial conversations with their peers about their observations.

Through our peer-to-peer accountability program, we help people be completely transparent without fear of repercussions. The person who reports the unsafe behavior is kept anonymous, and the person who was acting in an unsafe manner won't be disciplined.

Graham leadership uses these peer-to-peer reported incidents as learning opportunities. It's a way for employees to learn from small mistakes before they become big mistakes. Most importantly, we want to drive the crucial conversations that require employee engagement and ownership.

> OUR POLICY IS SEE SOMETHING, SAY SOMETHING. BUT **ALWAYS** DO SOMETHING.

ENVIRONMENTAL MANAGEMENT

Focusing on Sustainable Operations

On our journey to more sustainable operations, we see reducing the carbon footprints of our facilities as a key initiative now and in the future. We're already working across our organization to lower our energy and water usage, as well as reduce our waste to landfill. By challenging ourselves to come up with concrete, creative solutions, we plan to reduce our energy usage by 25% over the next 10 years and hope to one day eliminate our waste to landfills altogether.

Snapshot of Our Sustainable Manufacturing Efforts

LIGHTING & SENSOR UPGRADES

- 25 plants converted to LED or low-energy fluorescent lights
- 8 plants installed sensor-activated lights

CO_2 REDUCTION

- Reduced CO_2 emissions by more than 5% at select locations from 2010-2017

ENERGY SAVINGS

- Installed systems to regulate energy use, including climate control
- Upgraded to more energy-efficient plant equipment, including breakroom appliances
- Worked with local energy companies on solutions

WATER CONSERVATION

- Conserved water by leveraging wastewater for cooling systems
- Kicked off projects to reduce overall water consumption

Materials

Opportunities

- Tap into new sources of post-consumer resin
- Up the percentage of recycled content in products and packaging
- Reuse all post-industrial resin (by-products and scraps)

In 2018, the total weight of all materials we consumed, including the 220 million pounds used for packaging, was 1.6 billion pounds, and approximately 12% of these materials came from renewable sources. The total weight of all raw materials used to produce our products was approximately 1.4 billion pounds, and 6% came from post-consumer recycled material. Two percent of our total PET resin came from post-consumer recycled material, while 10% of our HDPE resin came from post-consumer recycled material.

Energy Usage

Opportunities

- Lower overall energy consumption by 25% over the next 10 years as committed to through the Department of Energy's Better Plants Program
- Identify and implement renewable sources of energy

We track three main sources of energy within our operation: electrical power, natural gas and propane. In 2018, electrical power accounted for 90% of our energy use, with the combination of natural gas and propane making up the other 10%. The total amount of energy consumption across all sources that came from nonrenewable sources equaled 4,413 TJ.

FUEL SOURCE	NORTH AMERICA	EUROPE	SOUTH AMERICA	ASIA	TOTAL
Electrical Usage (MWh)	1,008,615	55,858	38,147	1,753	1,104,373
Natural Gas Usage (mmBTU)	352,843	19,949	—	—	372,792
Propane Usage (gal)	343,861	7,265	97,364	—	448,491

Energy intensity is considered the amount of energy consumption divided by the total pounds of product produced. When taking all our facilities into account in North America, Europe, South America and Asia, we use 3.2 MJ of energy for every one pound of product we produce.

ENERGY SOURCE	TOTAL	% OF TOTAL
Electrical Usage (TJ)	3,976	90%
Natural Gas Usage (TJ)	394	9%
Propane Usage (TJ)	43	1%
Absolute Energy Consumption (TJ)	4,413	100%

"GRAHAM PACKAGING COMPANY'S COMMITMENT TO IMPROVING ITS ENERGY PRODUCTIVITY BY 25% OVER 10 YEARS ESTABLISHES THE COMPANY AS A LEADER IN EFFICIENCY AND HELPS STRENGTHEN THE NATION'S MANUFACTURING COMPETITIVENESS."

- **VALRI LIGHTNER**, Acting Director, Advanced Manufacturing Office, U.S. Department of Energy

SPOTLIGHT ON

the Better Plants Program

Recently, we joined the U.S. Department of Energy's Better Plants Program. This program works with manufacturers like us to develop strategies for saving energy. It provides us with dedicated technical experts who can help us set benchmarks and identify opportunities to save energy. They also offer in-plant training and conferences where they teach our employees how to develop, implement and replicate energy-saving projects. Through this program, we have committed to reducing our energy usage by 25% over 10 years.

Greenhouse Gas Emissions (GHG)

Opportunities

- Lower energy consumption
- Reduce transportation needs
- Identify and use less carbon-intensive materials

We recognize that climate change is real, and as the global community begins to think strategically about how to combat this complex issue, we're taking steps to measure and report on a big contributing factor: greenhouse gas emissions.

Gases like carbon dioxide, methane, nitrous oxide and fluorinated gases are called greenhouse gases because they trap heat in Earth's atmosphere. Larger concentrations of these gases in the atmosphere are the result of larger emissions, often from manufacturing facilities.

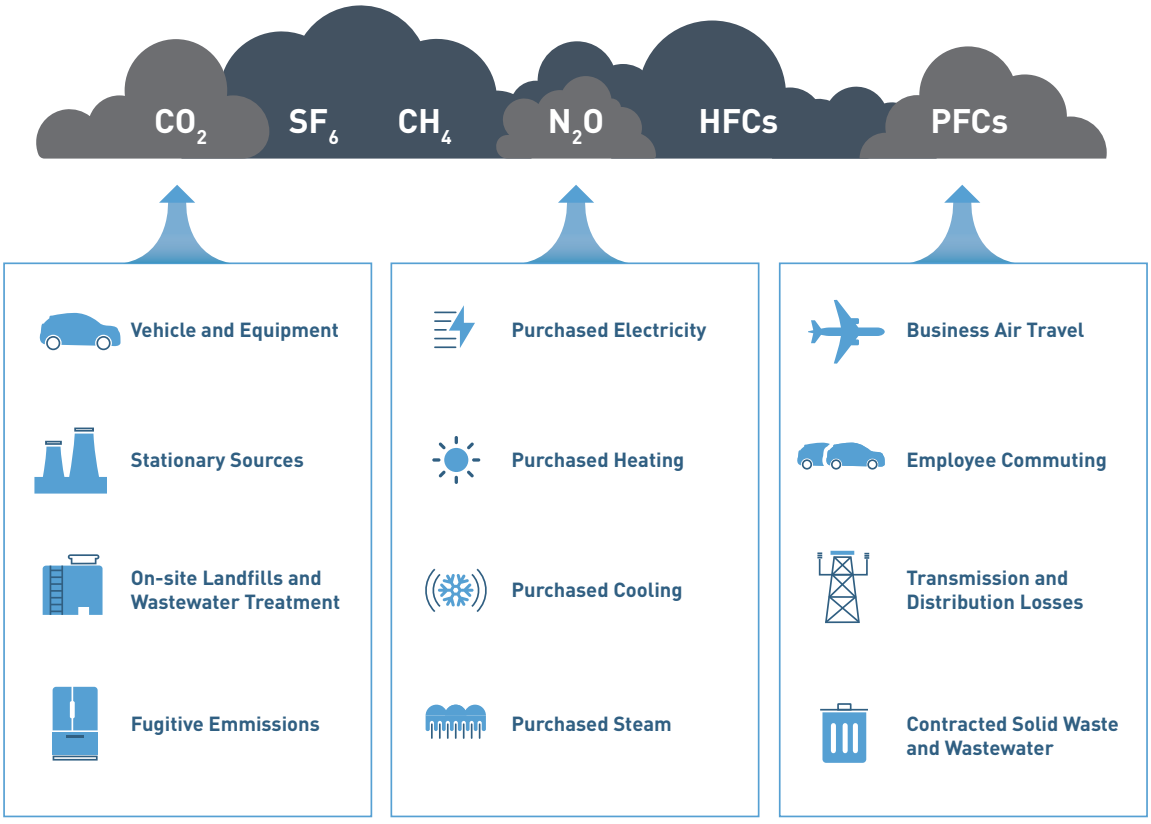
Carbon dioxide is the most common greenhouse gas, making up 82% of all GHG emissions in 2017.[7] It enters the atmosphere primarily through the burning of fossil fuels but also through certain chemical reactions.

The Greenhouse Gas Protocol regulates the release of these gases by providing standards, guidance and training to help businesses manage their GHG emissions. They've classified these emissions into three main types: scope 1, 2 and 3.

Three Scopes of GHG Emissions

- Scope 1: Direct emissions from owned or controlled sources
- Scope 2: Indirect emissions from the generation of purchased energy
- Scope 3: All indirect emissions present in the value chain of the company

Common Sources of Greenhouse Gas Emissions



Tracking Scope 1 & 2 Emissions

In 2018, our scope 1 emissions totaled 28,334 MT of CO_2e, while our scope 2 emissions totaled 491,085 MT of CO_2e. There are several ways we're looking to reduce GHG emissions in the coming year.

Lightweighting
Projects like lightweighting allow more product to be shipped in one truck, reducing the number of trucks needed to transport the same amount of product and thus lowering GHG emissions from the burning of fuel.

Diverting Plastics From Landfills
Our Graham Recycling Center recycles #2 HDPE bottles into post-consumer resin. This facility collects and uses approximately 45 million pounds of recycled material per year, diverting approximately 300 million plastic containers from landfills each year.

Developing Less Carbon-Intensive Products
Our ThermaSet® heat-set process allows PET containers to be used in hot fill, pasteurized and retort processes in place of glass containers. When comparing the end-to-end production of ThermaSet PET jars versus glass jars, PET jars had a 210 kg CO_2e reduction in carbon footprint.

Quantifying the sustainability of ThermaSet® PET with Life Cycle Assessment

16%
LESS ENERGY

93%
LESS AIR PARTICULATES

55%
REDUCTION IN SMOG EMISSIONS

38%
SMALLER CARBON FOOTPRINT

*Results from critically-reviewed, ISO 14044 LCA Study Comparint ThermaSet® PET jars to glass jars.

Customer Colocation
Customer colocation takes the transportation factor out altogether, allowing us to improve collaboration with our customers while saving valuable resources.

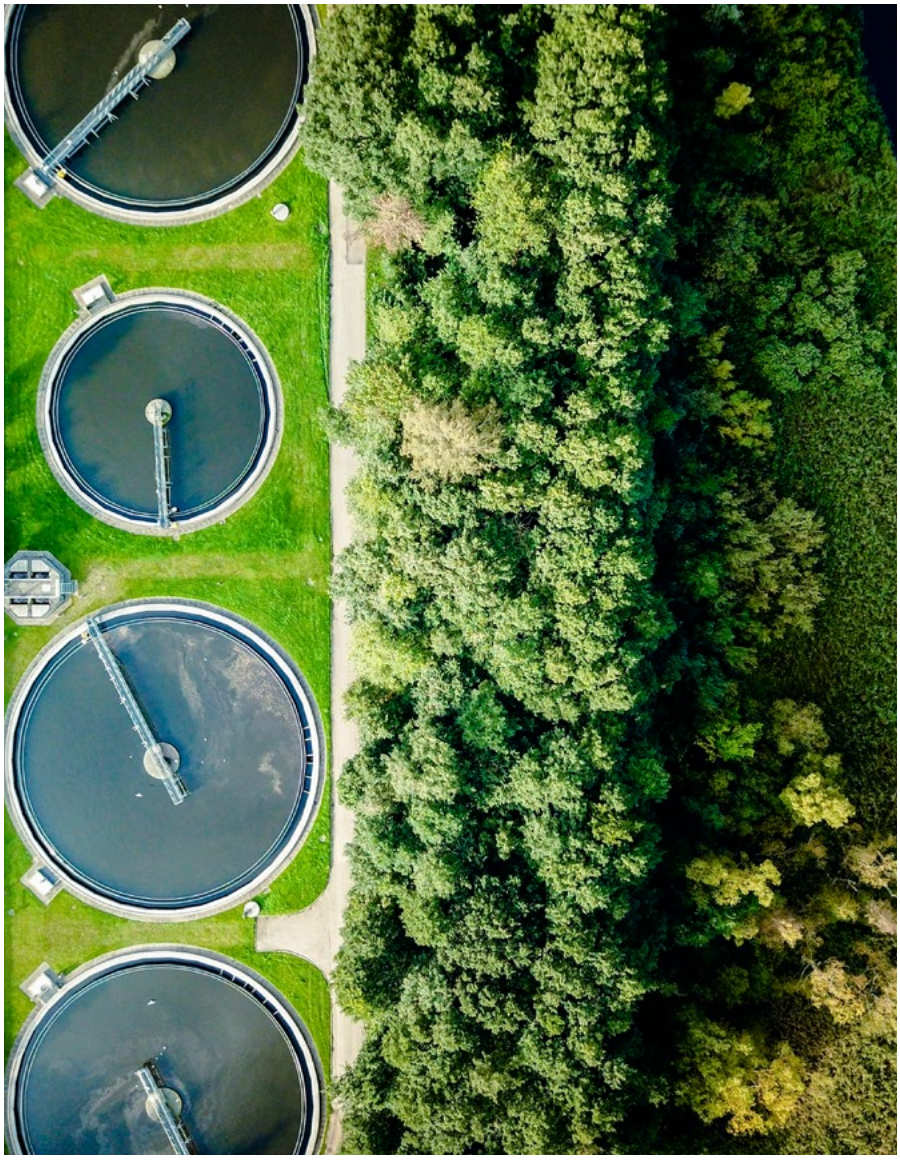
Reduced Energy Usage
We've committed to lowering our energy usage by 25% over the next 10 years as part of the U.S. Department of Energy's Better Plants Program.

Operational Waste & Water Consumption

Opportunities

- Implement zero waste programs and resin capture
- Continue recycling efforts
- Reuse water as part of cooling process

Operational waste and water consumption are two other important factors in the overall sustainability of our manufacturing facilities. In 2018, we sent 5.952 metric tons of material to landfills and used 1,521 megaliters of surface water. We're working toward reducing our landfill waste, while our water conservation efforts are mostly centered around reusing wastewater as part of our cooling processes.



SPOTLIGHT ON

the Zero Waste Program

In 2019, we plan to test a Zero Waste Program at several pilot plants. This program will include workshops on comprehensive recycling and other ways to reduce our overall waste to landfill numbers. We have a larger rollout planned for 2020 when we hope to involve all Graham Packaging facilities.

OUR partnerships

To show our commitment to the global sustainability effort, we're members of several organizations that advocate for responsible plastic packaging, better recycling habits and reduced energy usage. We'll continue to work shoulder to shoulder with these organizations to reshape our industry and its impact on the planet.

MEMBERSHIPS & ASSOCIATIONS

Broadening Our Reach

We're members of several sustainability-focused organizations, and together, we're working to promote environmentally responsible behavior and overcome the barriers that prevent us from living healthier, more sustainable lives.

The Association of Plastic Recyclers

We sit on the APR PET and Olefin Technical committees. Our role in this partnership is focused on PET and HDPE plastics and how we can help support APR membership through the development of technical resources, technical studies and education.

PLASTICS INDUSTRY ASSOCIATION

BETTER INDUSTRY. BETTER WORLD.

We provide industry leadership on the PIA Recycling Committee, while also playing an active role on the PIA Executive Board of the Food, Drug and Cosmetic Packaging Materials Committee and on the Environmental Health and Safety Committee.

Better Plants®

U.S. DEPARTMENT OF ENERGY

We've made a commitment to partner with the Department of Energy to reduce our energy consumption by 25% over the next 10 years.

ELLEN MACARTHUR FOUNDATION

We're one of the largest plastic manufacturing companies that have signed the Ellen MacArthur Foundation's New Plastics Economy Global Commitment. This commitment will bring together all our resources to reduce global waste and help our customers reach their sustainability goals by 2025.

THE RECYCLING PARTNERSHIP

The Recycling Partnership is an industry-funded, national nonprofit organization that leverages corporate funding to transform recycling in states, cities and communities. We've made a sizeable donation to support them, and we will work alongside them in the fight to keep plastic out of landfills.

Member of SUSTAINABLE PACKAGING COALITION®

The Sustainable Packaging Coalition® is a leading voice on sustainable packaging that focuses on end-to-end sustainability initiatives. As part of this organization, we will collaborate with other industry leaders and share knowledge to help everyone take more meaningful action toward packaging sustainability.

Looking Ahead

As we look toward the future, we know there's work to be done to ensure our planet is safe and clean for the generations who will follow us. We've embraced our role in helping to preserve the planet, and we will work tirelessly to find new, comprehensive solutions to divert plastic bottles from landfills, reduce ocean-bound plastic and promote recycling throughout the world.

Through formal commitments, like signing the Ellen MacArthur Foundation's New Plastics Economy Global Commitment and joining the U.S. Department of Energy's Better Plants Program, and through grass roots efforts in our local communities, we're taking steps to establish Graham Packaging as a leader in sustainability.

This report isn't meant to be viewed as a tabulation of results. Rather, it's a benchmarking tool – one that shows us where we are today and reminds us of where we want to go. Whether you're a customer, manufacturing partner or member of the wider community, we hope you'll join us in our commitment to a more sustainable future.

Sources

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