



MISSION

providing packaging solutions through engaged hearts and minds

VISION

To be the preferred global rigid plastic container enterprise, delivering high-impact results to our markets and stakeholders with extraordinary speed, flexibility, sustainability and value

PURPOSE

Creating products which inspire choice, provide value and are sustainably balanced for our customers



Table of Contents

Company Timeline	Energy Consumption Reduction 20
Letter from the President	Compressed Air 21
Locations	Direct Object Printing
Sustainability Snapshots	Waste and Scrap Reduction 24
Plastipak Affiliates	Additional Process Improvements 25
Plastipak's Green Initiative	ThermoShape™ Technology 27
Engaging the Environments	DiamondClear™ Technology 28
Life Cycle Thinking	EPET Technology
Sustainability Objectives	Aerosol Technology
Clean Tech	ThermaLite™ Technology 31
Global Recycling Centers	EcoPreform™ Manufacturing 32
PCR Content	Resin Making
Whiteline Express	Reduced Content
LEED Certification	Additional Product Improvements 35
Energy Star Partner	Commitment to Sustainability
Process Improvements Utilizing Water 19	Award-Winning Advancements 38

















1960s

Plastipak Founded in 1967

Established in 1967, Plastipak provided innovative, plastic packaging to deliver water. Young family heritage was firmly rooted within the foundation of the company.

1980s

Plastipak Expands Capabilities

Plastipak established its logistics capabilities with the launch of Whiteline Express. The creation of Clean Tech provided new innovative recycling solutions solidifying Plastipak's commitment to sustainability.

2000s

Global Expansion

Plastipak began adapting transformational platforms, expanded into Europe, developed hot fill technologies, and achieved LEED certification at the Victorville, California site.

PRESENT

Purpose Driven Growth

With Plastipak facilities established on five continents, the company continues to expand its influence in packaging development, production and recycling across the globe.

Letter from the President

Plastipak Holdings, Inc. is a leading supplier of plastic containers, manufacturing technologies, equipment, and services. We are one of the largest users of PET and HDPE resin globally and an industrial leader in the production of dynamic custom containers.

The standards and values that marked Plastipak's earliest days remain our guiding principles today. Our history of notable firsts and remarkable achievements was made possible only by way of invaluable connections, trusted relationships, and commitment to excellence.

Guided by our mission statement for 50 years, "providing packaging solutions through engaged hearts and minds," we are proud to be a global leader in the rigid plastic packaging industry while we continue as a business in balance with the environment.

Plastipak holds itself accountable to stakeholders to run operations in an environmentally-friendly manner for current and future generations. We have made that goal an inseparable part of our business plan by guiding our sustainability initiatives through a bottle to bottle approach to recycling.

Of note, our new recycling center in Beaune, France handles the most bottle to bottle recycling in Europe. Our recent addition of a recycling center in Hemswell Cliff, UK solidifies our stance as one of the largest global food grade producers of recycled PET materials.

We integrate commitment with breakthrough innovations to create transformational platforms to meet customer demands around the clock and around the world. Our global expansion has led to market-changing technologies such as Aerosol Technology and ThermaLite™, which provide sustainable alternatives to conventional packaging.

We thank our customers for the opportunity to serve, and we look forward to new challenges ahead as we continue to earn your trust in our service.

William C. Young President & CEO Plastipak Holdings, Inc.

service that builds relationships and cares for the environment

Strategic Expansion





MCCALLA, AL United States



VICTORVILLE, CA
United States



RECIFE Brazil



URLATIRomania



RUDNA Czech Republic



BASCHARAGE Luxembourg



Plastipak

OUR MISSION

Providing packaging solutions through engaged hearts and minds.

OUR VISION

To be the preferred global rigid plastic container enterprise, delivering high-impact results to our markets and stakeholders with extraordinary speed, flexibility, sustainability and value.

OUR PURPOSE

Creating products which inspire choice, provide value and are sustainably balanced for our customers.



Sustainability Snapshots

RECOGNIZED as a Detroit Free Press GREEN LEADER

50 YEARS of engaged HEARTS MINDS

Recycling Capacity to

OVER 20 BILLION Bottles

U.S. Sites Reduced ELECTRICITY CONSUMPTION by 5% over the last three years

CERTIFIED at the Gold Level in Victorville, CA

Recycling

Recognized in the SUSTAINABLE PACKAGING CATEGORY with a PAC Global Leadership Award

One of the LARGEST producers of recycled PET materials WITH FOUR GLOBAL RECYCLING CENTERS

Earned Dupont's PLASTIPAK'S Gold Award for PLASTIPAK'S

Direct Object Printing

PETand
HDPE
at Clean Tech
since 1989

Bronze Greenstar SUSTAINABLE AWARD from Starpack for Thermalite[™] Jars

Plastipak Affiliates

PLASTIPAK HOLDINGS, INC. is a \$2.8 billion diversified enterprise based in Plymouth, Michigan. Together, the companies, subsidiaries and affiliates employ over 6,400 people. Its wholly-owned subsidiaries include Plastipak Packaging, Clean Tech, and Whiteline Express. Through these entities, Plastipak Holdings has demonstrated its strong commitment to sustainability for nearly 30 years.

PLASTIPAK PACKAGING

- Rigid plastic packaging producer
- Founded in 1967
- Headquartered in Plymouth, MI
- Over 6,000 associates globally
- Over 60 production sites strategically located in North America, South America, Europe and Africa
- In 2016 produced over 40 billion units globally for many of the world's leading consumer goods companies

CLEAN TECH

- Processes plastic bottles into premium quality recycled material
- Founded in 1989
- Headquartered in Dundee, MI
- Recycles both polyethylene terephthalate (PET) and high density polyethylene (HDPE)
- Recycling centers span the globe in Bascharage, Luxembourg; Beaune, France; and Hemswell Cliff, UK

WHITELINE EXPRESS

- A strategic transport system providing logistics support
- Founded in 1984
- Headquartered in Plymouth, MI
- An EPA SmartWay Partner









Plastipak's Green Initiative

Defined by a Policy of Reduce, Recycle & Reuse with a Bottle to Bottle Approach to Recycling



Engaging the Environments



Engaging
THE ECONOMIC ENVIRONMENT

Ensuring financial health with sound, sustainable business decisions.

Engaging THE HUMAN ENVIRONMENT

Empowering diverse employees with enriching opportunities.



Engaging
THE NATURAL ENVIRONMENT

Preserving our natural resources for this generation and the next.





Life Cycle Thinking

Product Development



Sustainability Objectives

ONGOING EFFORTS

We are committed to making Plastipak a leader in sustainability awareness and action, a company that will positively affect the lives of our associates, their children and future generations.

SUSTAINABLE OPERATIONS

Our sustainability objectives include evaluations of business practices to ensure natural resources are used appropriately, as well as the use of renewable and recyclable materials.

STRONG COMMITMENT

Running operations in an environmentally-friendly manner is woven into our business plan. We hold ourselves accountable to stakeholders to uphold our unwavering commitment to the environment.





process



we categorize our improvements into three distinct groups



Clean Tech

RECYCLING AFFILIATE

An early champion of recycling, Plastipak signaled a ground-breaking commitment to environmental sustainability in 1989 by starting its own recycling company, Clean Tech. Every year Clean Tech's recycling keeps billions of plastic containers out of landfills.

PET AND HDPE RECYCLING

Recycled polyethylene terephthalate (PET) plastic is used to make containers for carbonated beverages, milk, water and other food products. Recycled high density polyethylene (HDPE) plastic can be used to make containers for laundry detergent, household cleaners, and other common products.

BOTTLE TO BOTTLE APPROACH

Both PET and HDPE finish the recycling process as post-consumer recycled (PCR) resin pellets. The PCR resin pellets are then used to produce more plastic containers as part of our bottle to bottle approach to recycling.

CLEAN TECH INCORPORATED



Global Recycling Centers

ADVANCED RECYCLING TECHNOLOGY

Plastipak utilizes the most advanced recycling technologies globally in converting collected and recycled plastic containers into high quality HDPE and PET resin.

SUPPORT CUSTOMER SUSTAINABILITY GOALS

Plastipak's recycling capabilities support our key customers' strategic goals of improving the sustainability of their packaging and increasing the amount of post-consumer recycled PCR plastic materials reused back into their containers.



UNITED STATES

Clean Tech, Plastipak's affiliate and dedicated recycling center, is one of the top five plastic recyclers in the U.S., recycling both PET and HDPE. Using the latest leading recycling systems and technologies, high-quality post-consumer recycled (PCR) resin is easily converted back into containers for food, laundry detergent, household cleaners, and other common products.

EUROPE

In Europe we have capacity to produce over 250 million pounds of "food grade" PCR PET material to be used in the production of new containers as part of our bottle to bottle approach to recycling. One of the largest PET recycling plants in the world, our Beaune site has a recycling capacity of more than 50,000 tons per year. Our new UK facility adds capacity to process more than 5 billion additional bottles per year.



PCR Content

POST-CONSUMER RECYCLED (PCR) MATERIAL

Plastipak turns recycled containers into profit by using post-consumer recycled (PCR) material as a major source of raw material. We create sustainable products based on the virtually limitless use and reuse features of plastic due to its exceptional flexibility and durability.

100% PCR MATERIAL

Plastipak manufactures products made completely from 100% PCR material, including Naked Juice and PepsiCo Beverages Canada's 7UP EcoGreen™ bottle, Canada's first soft drink bottle made from 100% recycled PET plastic.



CLEAN TECH INCORPORATED

Clean Tech is currently the ONLY qualified PCR supplier for Naked Juice and 7UP containers made from 100% PCR material.

100% RECYCLED CONTENT

Whiteline Express



EPA SMARTWAY PARTNER

Our Whiteline trucking affiliate carries the prestigious EPA SmartWay certification, a national honor recognizing environmental stewardship.

- Anti-idling devices
- Aerodynamic fairing
- Higher efficiency tractors

FOCUSED COMMITMENT

Whiteline is committed to technologies and processes that reduce its carbon footprint while protecting the environment for future generations.

SUSTAINABILITY INITIATIVES

Whiteline is committed to ongoing efforts to reduce its carbon footprint and protect the environment for future generations.

- More environmentally-friendly and energy-efficient trucks
- Redefined tractor specifications
- Revamped driver training materials to improve fuel economy
- Fuel-saving, low-rolling resistance tires
- Lower viscosity, full synthetic driveline lubricants
- 30% biodiesel blended fuel

6% increase in miles per gallon over the last five years

LEED Certification

VICTORVILLE, CA ACHIEVES GOLD LEVEL LEED CERTIFICATION

Our U.S. manufacturing site in Victorville, California is another example of our sustainability efforts, earning Gold LEED certification under the New Construction and Major Renovation Rating System.

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN

A voluntary, third party verification, the LEED (Leadership in Energy and Environmental Design) Green Building Rating System is the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. LEED is managed by the Green Building Certification Institute, a division of the non-profit U.S. Green Building Council (USGBC).



Energy Star Partner



CONTINUOUS ENERGY PERFORMANCE IMPROVEMENT

Plastipak is proud to be an ENERGY STAR Partner since 2008. We are committed to protecting the environment through the continuous improvement of energy performance by:

- Measuring and tracking energy performance with ENERGY STAR tools
- Utilizing ENERGY STAR Energy Management Guidelines to achieve energy savings
- Spreading the word about the importance of energy efficiency to staff and community

UTILIZING ENERGY STAR TOOLS



Process Improvements Utilizing Water

WATER TREATMENT

Water is essential to the recycling process. To reduce water consumption, Clean Tech cycles process water through its own in-house water treatment plant for reuse.

WATER COOLING

Water also plays a crucial role in cooling various manufacturing operations. Certain operations require chilled water, which uses energy to run the chillers. Other operations, however, can be sufficiently cooled with ambient water from our water towers, which does not require any energy. When applicable, we convert from chilled water to tower water to reduce energy consumption.

Energy Consumption Reduction

ELECTRICITY USAGE

Plastipak identifies electricity as a key area where we can reduce usage. Over the last three years, we have implemented initiatives that enabled us to reduce our kWh/KG by a total of 5%.

ENERGY TEAM

To drive continued improvements in this vital area, an Energy Team was formed. As a result, energy audits, training, sharing best practices and monthly meetings have been established.

OPERATIONS DURING NON-PEAK PERIODS

When possible, Plastipak strategically runs operations during periods of low demand (non-peak) to achieve more level consumption throughout the day, resulting in better efficiency. Production at our Victorville, California site is scheduled to run primarily during non-peak hours.



MORE OPPORTUNITIES FOR REDUCTION

Plastipak implemented other energy-saving projects throughout the organization:

- Installed motion sensors to automatically turn lights on and off in administration and low traffic areas
- Insulated barrel zones, water lines and temperature controlled areas
- Installed energy efficient light bulbs
- Over 5,700 associates globally
- Usage of adjustable sleeves to vent warm exhaust air outside during warm weather and inside during cold weather
- Established procedures to turn off idle equipment

Compressed Air

COMPRESSED AIR PRODUCTION

Plastipak decreases electricity consumption resulting from compressed air production through compressor sequencing. Sequencing enables running only one compressor in an unload/load mode while the others are continuously loaded or off.

COMPRESSED AIR USE

Compressed air use is targeted by reducing our air system pressure and converting certain operations that utilize compressed air to more efficient sources such as blow motors.



AIR LEAK WASTE

According to the U.S. Department of Energy, compressed air leaks can waste 20-30% of a compressor's output. Recognizing the significance of this waste, our sites make it a top priority to eliminate these leaks.

ELIMINATING COMPRESSED AIR LEAKS

Our Compressed Air Leak Program uses specialized devices, known as ultrasonic leak detectors. Every week an associate at each site canvasses the plant for compressed air leaks using the ultrasonic leak detector so that leaks can be repaired as soon as possible.



Direct Object Printing

ENVIRONMENTALLY-FRIENDLY PRINTING SOLUTION

Plastipak's Direct Object Printing technology eliminates the need for label substrates while offering customization. It reduces our carbon footprint in production, reduces transportation and post-consumer waste, and earned the prestigious DuPont Gold Award for Technological Advancement and Responsible Packaging.



Waste and Scrap Reduction

ZERO LANDFILL GOAL

In 2009, we created site WOW teams with the purpose to 'wipe out waste' and develop a cohesive approach towards a zero landfill goal. We established a 70% landfill reduction goal for 2014. We met that goal early in 2013 with 13 manufacturing sites. Since then we have added additional manufacturing sites and have maintained that level. We currently have 5 sites attaining zero landfill with the use of waste to energy incineration technology.

STRATEGIC WASTE REDUCTION INITIATIVES

This tremendous improvement in our landfill waste was the result of a disciplined approach to recycling, which included:

- Forming Environment Improvement teams
- Waste reduction training
- Establishing centralized recycling areas
- Setting up collection bins in strategic locations

SCRAP REDUCTION ACCOMPLISHMENTS

As we continually strive to improve our operations, we closely monitor our scrap rate. Over the last five years, Plastipak has dramatically reduced its scrap rate by 41% overall for containers made of PET and HDPE.

ADDITIONAL SAVINGS

While we are able to reuse almost all scrap by processing it in our in-house recycling operations and blending it with virgin material, this process consumes energy. Additionally, production lines must be run for longer periods of time to compensate for rejected units. By reducing our scrap rate, we minimize the consumption of energy and other resources.



Additional Process Improvements

HYBRID GAYLORD CONTAINERS

The hybrid gaylord container is made with reduced cardboard content for a longer-lasting, more efficient storage item. About 90% of the gaylord containers we use are hybrids.





ThermoShapeTM Technology

ThermoShapeTM is Plastipak's exclusive technology and breakthrough process involving lightweighting and reshaping a hot fill bottle.



DiamondClear™ Technology

EXCEPTIONAL PERFORMANCE

With DiamondClear[™] technology, Plastipak has redefined the category of high-performance PET packages for a wide range of shelf-stable foods and beverages. The durable monolayer structure of DiamondClear[™] provides PET packaging solutions with clarity, barrier performance and sustainability.

DIAMONDCLEAR™ ADVANTAGES

- Weighs as little as one-tenth of a comparably-sized glass package
- Significant transport cost savings
- Reduced carbon footprint
- Fully recyclable
- Exceptional clarity
- Advanced barrier protection
- Monolayer structure eliminates potential aesthetic and performance issues



EPET Technology

EPET ADVANTAGES

EPET combines the benefits of PET with extrusion molding capabilities. These fully-recyclable containers offer unique shapes and sizes along with handleware and Wide Mouth options for both food and non-food products.

EPET PROVIDES AN OPTIMAL BALANCE IN:

- Aesthetics
- Recyclability
- Speed to market
- Flexibility in size and shape



Aerosol Technology

REVOLUTIONARY AEROSOL TECHNOLOGY

The aerosol container is a revolutionary, sustainable alternative to aluminum. With a low carbon footprint, Aerosol Technology is suitable for a wide range of applications from home and personal care to food.

AEROSOL TECHNOLOGY ADVANTAGES:

- Can be transparent, opaque, clear or colored
- Warm, soft touch
- Rust-free
- Dent-free
- Lightweight PET packaging





ThermaLite™ Technology

LIGHTWEIGHT PET JARS

Innovative ThermaLite $^{\text{M}}$ PET jars replace glass for hot-filling and pasteurization. Up to 85% lighter than glass, the packaging offers significant carbon footprint savings and has been honored with the Greenstar Sustainable Award from Starpack.

THERMALITE™ BENEFITS:

- Significant transport cost savings
- Substantial carbon footprint savings
- Shatterproof
- Transparent
- Recyclable



EcoPreform™ Manufacturing

PLASTIPAK MANUFACTURES THE ULTIMATE ECO-FRIENDLY ECOPREFORM™

Building on its unrivaled recycling expertise as well as its bio-based resin capability, Plastipak set a new standard with preforms consisting of 75% recycled PET and 25% bio-based PET.



Resin Making

RESIN MAKING CAPABILITIES

Plastipak's resin making capabilities give our customers the availability for sustainable packages as they prefer more PCR PET plastic resin in their packaging. Plastipak recycles packaging and produces PCR resin at Clean Tech in Dundee, Michigan along with European operations in Bascharage, Luxembourg; Beaune, France; and Hemswell Cliff, UK.





SINGLE PELLET

Plastipak introduces the single pellet, made of up to 20% recycled resin and 80% new resin. This environmentally-friendly option encompasses ideal sustainability elements within a single pellet.

Reduced Content

LIGHTWEIGHTING PROGRAMS

Lightweighting is the technical process of reducing the weight of plastic bottles, while maintaining functionality, durability and consumer appeal. This reduces the resin content of the bottle and uses less electricity overall. Plastipak has achieved a 33% reduction in package content since 2006.

20 OUNCE BOTTLE

We reduced the PET bottle weight for carbonated beverages from 23.7 grams to 21.5 grams, resulting in a 9% reduction.

2 LITER BOTTLE

We commercialized the lightest carbonated beverage package in the U.S. by collaborating with strategic customers. At 42.6 grams, the PET resin content of this package was reduced by approximately 10%.

CONCENTRATED LAUNDRY DETERGENT

In the mid-1990s several consumer goods companies concentrated their laundry detergent, including Procter & Gamble, one of our largest customers. While the doses remained unchanged, the volume was reduced by 50% (2x concentrated). Plastipak played a significant role in reducing the size of the containers to accommodate this major change.

ADDITIONAL BENEFITS

We have continued to pursue incremental opportunities on many package sizes. In addition to using less plastic for the bottles, this initiative resulted in supply chain efficiencies related to transportation and warehousing.



16 Ounce Dressing Bottle

Redesigned packaging reduced the weight of Kraft's dressing bottle by 19%. This design saved 2 million pounds of plastic.

Additional Product Improvements

1881 FINISH DEVELOPMENTS

The 1881 Finish Developments program was initiated by the International Society of Beverage Technologists to optimize the weight and functionality of carbonated drinks. In 2008, we joined the 1881 conversion, reducing the finish weight by approximately 25%.

MULTI-LAYERED HDPE

We use recycled material for the middle layers of multi-layered HDPE containers. This maximizes the use of recycled plastic collected from homes and offices that are sent to recycling facilities such as ours.





Commitment to Sustainability

Plastipak has been dedicated to environmental stewardship since its inception a half century ago, protecting the environment for future generations and acting as a responsible global citizen for a shared community. Sustainability is etched into every aspect of Plastipak's daily operations across the globe. Plastipak's commitment to a consistent model ensures sustainable processes for years to come.





Award-Winning Advancements



2014 Detroit Free Press Green Leader. Honorable Mention

2015 Bronze Greenstar Sustainable Awar from Starpack for ThermaLite[™] jars



DuPont's Packaging Innovation Awards

2009 | 2011 | 2012 | 2013 | 2014



Procter & Gamble **P&G** Supplier of Excellence Award 2008 | 2011 | 2012 | 2013



DuPont's Gold Award for Technological Advancement and Responsible Packaging for direct object printing







Plastipak

GLOBAL BUSINESS and TECHNOLOGY CENTER

41605 Ann Arbor Road Plymouth, Michigan 48170 Phone (734) 455-3600 Fax (734) 354 -7391

plastipak.com/sustainability

Copyright © 2017 Plastipak Packaging, Inc. All rights reserved.