

2011 U.S. Glass Container Industry Initiatives

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Glass Packaging Institute

AIMGF Members Meeting
Delhi, India
September 22, 2011

Glass is ENDLESSLY Recyclable



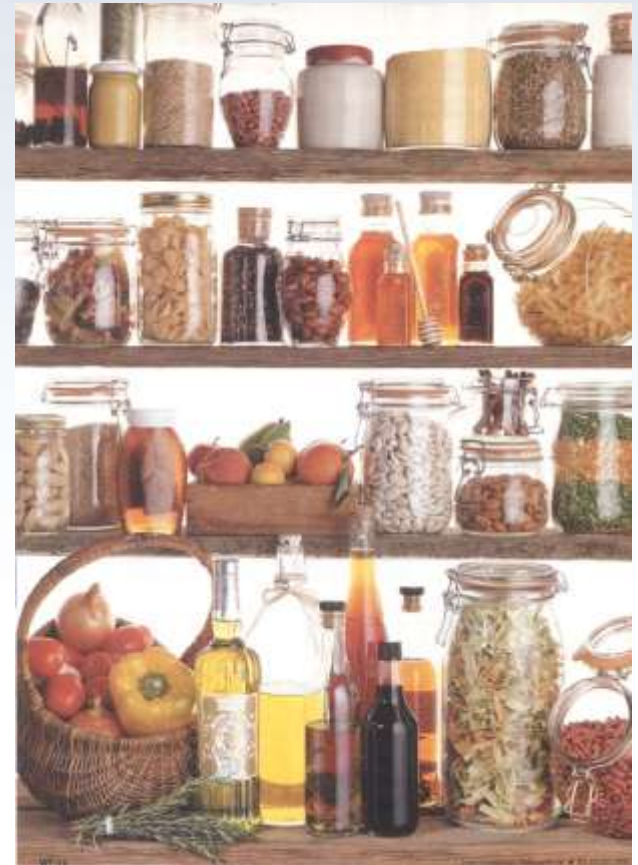
U.S. Glass Container Industry

- 48 glass container plants in 22 states comprise a **\$5.5 billion dollar industry**
- 102 glass container furnaces produce approximately **30 billion glass food, beverage, cosmetic, spirits, wine, and beer containers annually**
- The industry employs approximately **8,000 salaried and represented hourly employees** in our glass container plants, warehouses, sales forces ... along with thousands more in our supplier companies across the U.S.



Glass Packaging Institute Historical Overview

- **1919–1943** Glass Container Manufacturers Association of America established in NYC
- **1945** reestablished as the Glass Container Manufacturers Institute
- **1976** moved to Washington, DC and renamed the Glass Packaging Institute



About the GPI

The **Glass Packaging Institute** represents the North American glass container industry:

- 9 member glass container producers
- 36 associate member supplier companies

Through GPI, glass container manufacturers advocate job preservation and industry standards; provide education; and promote sound energy, environmental, and recycling policies.



Regular GPI Members

Anchor Glass
Gallo Glass Co.
Kelman Bottles
Leone Industries
MillerCoors
O-I
O-I Canada
Verallia North America
Vitro Packaging



Associate GPI Members

AGR International, Inc.
Carl Strutz & Co., Inc.
Chattanooga Labeling Systems
Dura Temp Corporation
E.W. Bowman, Inc.
E-Cullet Inc
Emhart Glass
FMC Corp.
Franklin Industrial Minerals
Frontier Transportation, Inc.
Georgia-Pacific Corp.
General Chemical
Glass Industry Consulting (GICI)
Inland Label
Innerpac, Inc.
Lattimer Engineering
Law Offices of Thomas H. Mabie
Lilja Corporation

MeadWestvaco
Morgan, Lewis & Bockius
OCI Chemical Corporation
Pacific Southwest Container
Quantum Engineered Products, Inc.
Quest Industries, LLC
Ross International, Inc.
RTS Packaging, LLC
Searles Valley Minerals
SGCC
Solvay Chemicals
Spear
Specialty-Rondot, Inc.
Strategic Materials Inc.
Sun Chemical Corporation
TOMRA North America
U.S. Silica Co.
Unimin Corporation



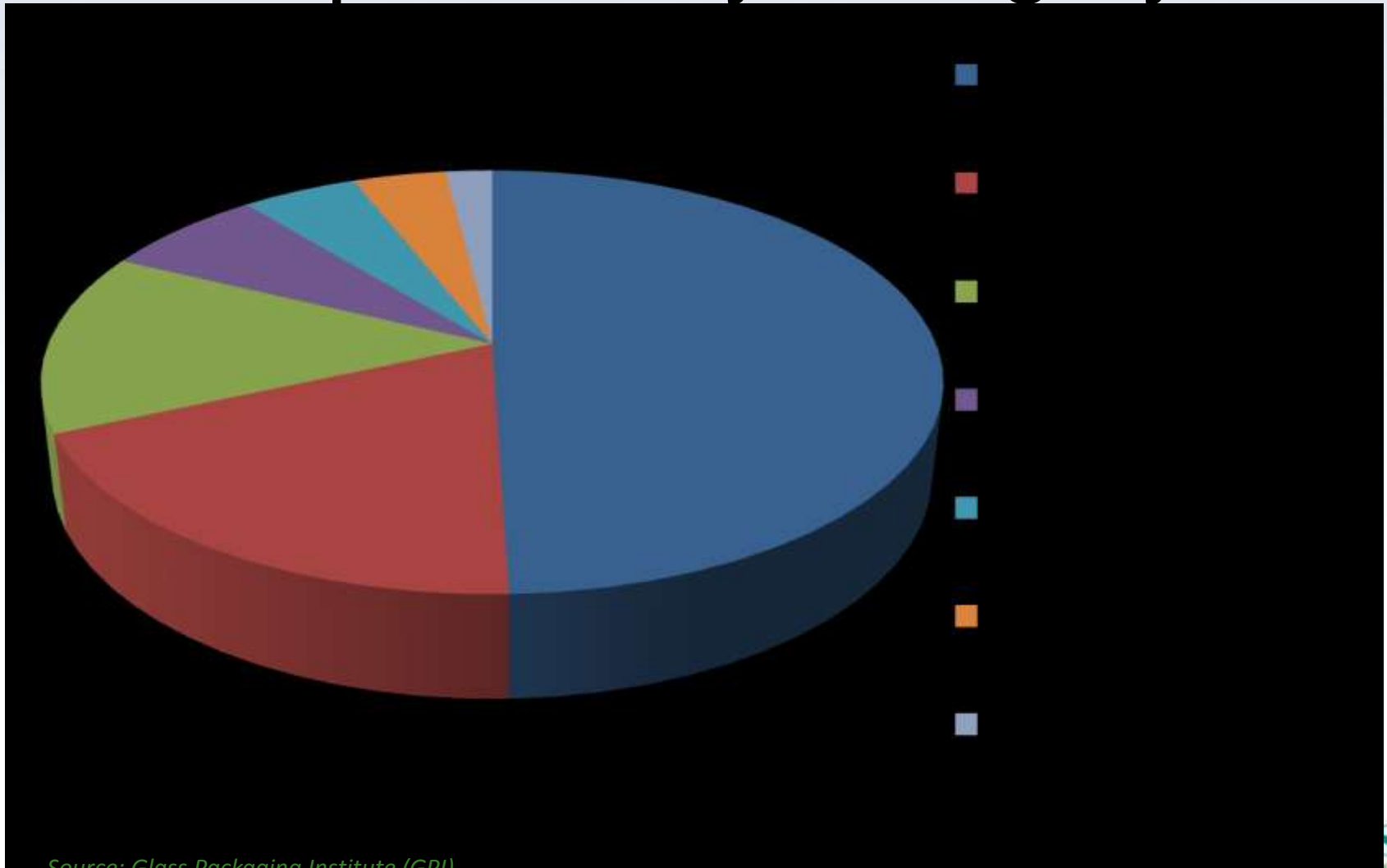
48 U.S. Glass Container Manufacturing Plants in 22 States

<u>State</u>	<u># Per State</u>
Pennsylvania	5
California	5
Indiana	4
Georgia, Illinois, New Jersey, North Carolina, Oklahoma	3
Colorado, Missouri, New York, Virginia, Texas	2
Arkansas, Florida, Louisiana, Massachusetts , Minnesota, Ohio, Oregon, Washington*, Wisconsin	1

*Bennu Glass to restart 4th quarter 2011



2010 U.S. Glass Container Shipments by Category



Source: Glass Packaging Institute (GPI)

U.S. Glass Container Shipments & Production 2010 Compared to 2009

Categories Jan-December, 2010 vs. Jan-December, 2009	Shipments	Production
Food	-0.9%	FLAT
NA Beverages	- 6.1%	-1.9%
Beer	-8.0%	-7.7%
Liquor	-0.5%	-0.9%
RTD Alcohol	-10.1%	+2.8%
Wine	+6.5%	+3.0
Other	+0.1%	-7.4%
TOTAL	-5.4%	-4.6%

Source: Glass
Packaging Institute



U.S. Glass Container Shipments & Production First Half 2011 Compared to 2010

Categories January – June 2011 January – June 2010	Shipments	Production
Food	+0.6%	-0.6%
NA Beverages	- 3.4%	-3.1%
Beer	-2.1%	-4.4%
Liquor	-3.1%	-3.0%
RTD Alcohol	+1.5%	-14.2%
Wine	+7.5%	+7.1%
Other	-11.1%	-12.5%
TOTAL	-1.0%	-3.1%

Source: Glass
Packaging Institute



Glass Container Life Cycle Assessment

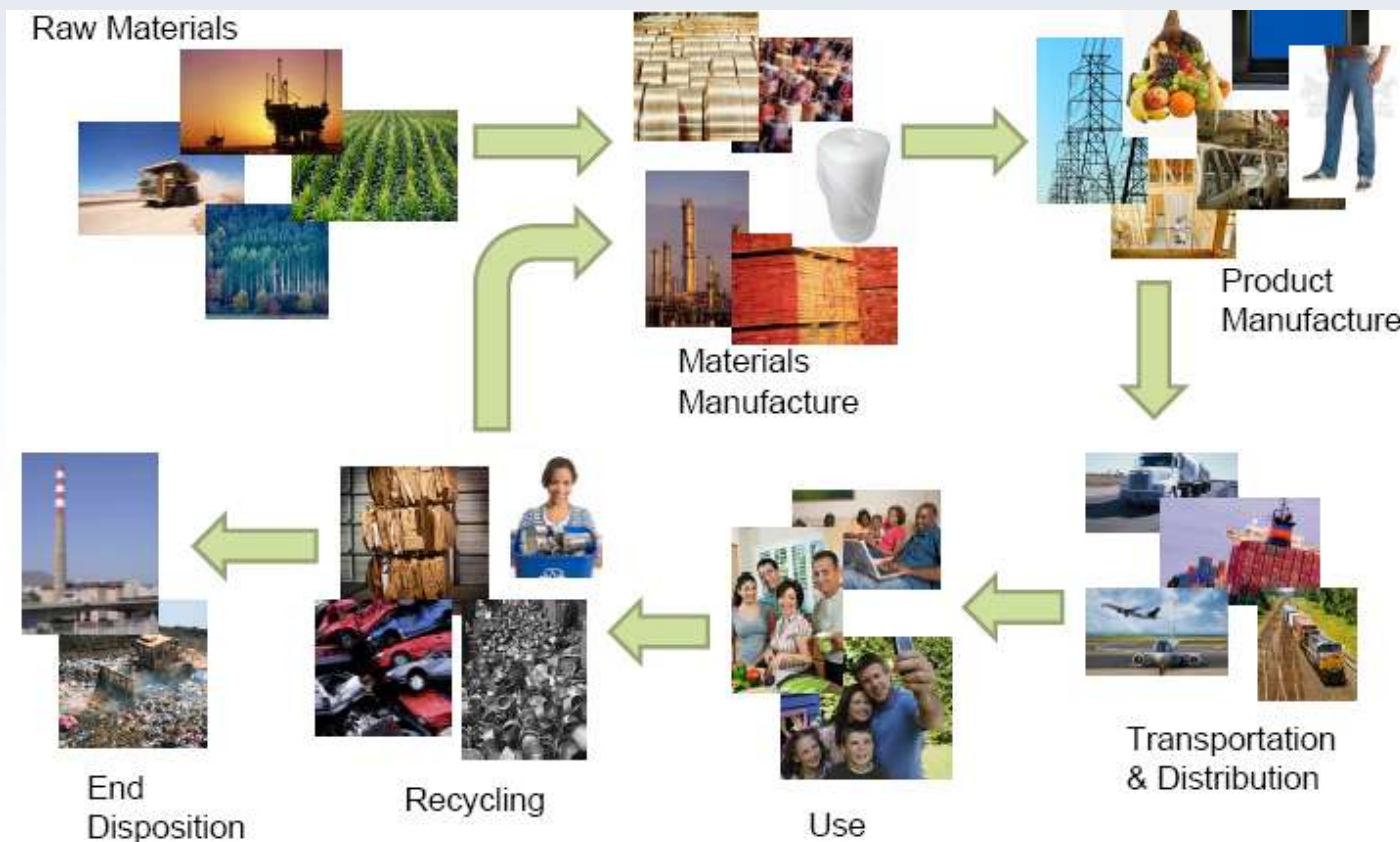
1st LCA on North American Glass Industry

- ✓ Conducted 2008-2009
- ✓ Released September 2010
- ✓ Covered 105 furnaces
- ✓ 75% of industry participation
- ✓ 5 glass container companies
 - Gallo Glass
 - Leone Industries
 - Owens-Illinois, Inc.
 - Saint-Gobain Containers, Inc.
 - Vitro Packaging LLC



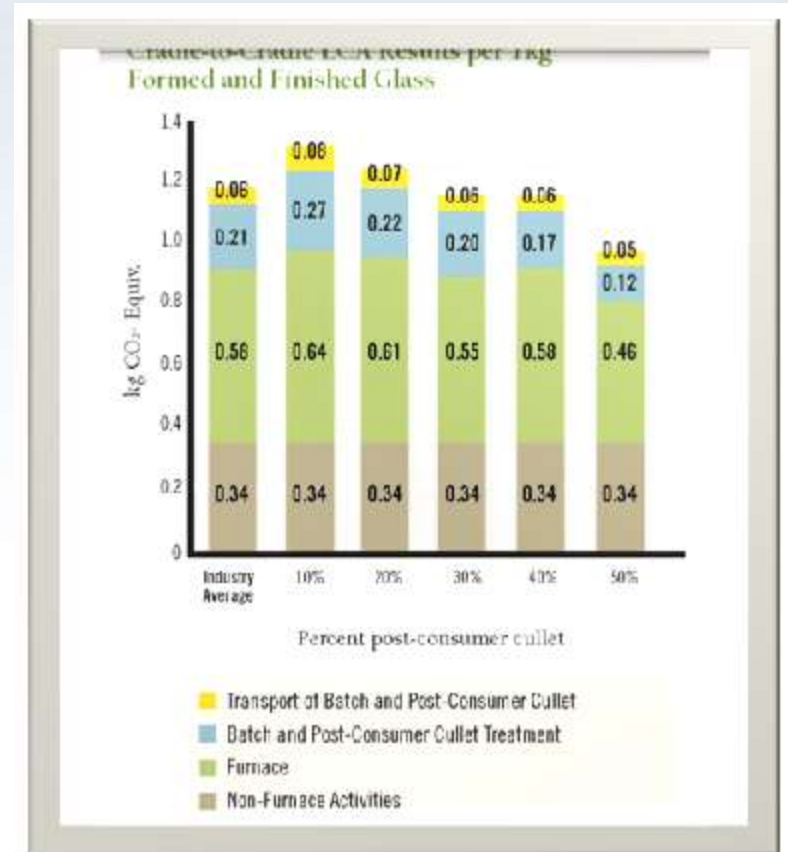
Glass Container Life Cycle Assessment

North America / Europe



Glass Container Life Cycle Assessment Rigorous Criteria

- **PEAmericas/PEInternational** conduct studies in North America and Europe
 - Recognized international leader in LCAs
- Analysis based on **state of the art modeling** methodology
- Strict **ISO 14040/44** guidelines followed
- **Peer reviewed** by authorities in LCA methodology and research



Glass Container Life Cycle Assessment

LCA in Real Terms

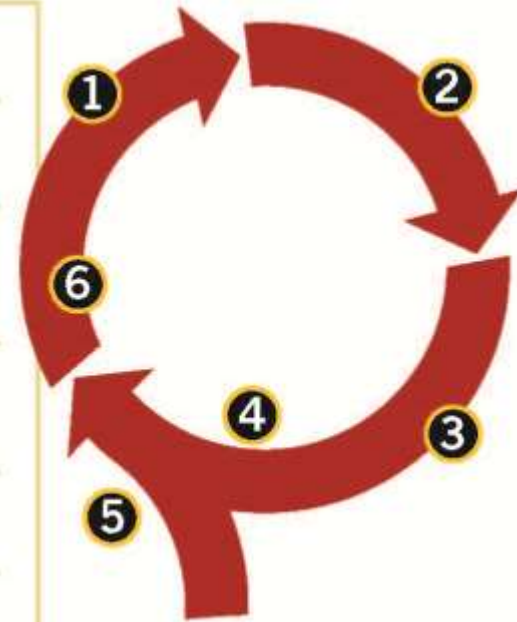
At 50% recycled glass
in manufacturing:

**Removes 2.2 M
metric tons of CO2
emissions**

*= 400,000 cars off the
roads each day*

Glass: The Perfect Cycle

1. The new glass packaging is filled with product and distributed through retail outlets.
2. The product is purchased by consumers and consumed.
3. Containers are collected through curbside, drop-off centers, and commercial on-premises locations.
4. Recovered glass packaging is crushed into cullet and used as raw material to make new glass packaging.
5. Virgin raw materials are added as needed to the mix for new packaging.
6. The raw material is formed into new glass packaging.



Industry Recycling Goal: 50% Recycled Content by 2013



- **First Objective:**

- Preserve U.S. jobs in an “Energy Intensive, Trade Exposed” environment:

- Improve competitiveness
 - Reduce high energy costs
 - Support improved materials management models

Industry Recycling Goal: 50% Recycled Content by 2013



■ **Second Objective:**

– Drive industry sustainability initiatives

- Conserve energy
- Save raw materials
- Reduce air emissions ... including NO_x, SO_x, PM, and greenhouse gases (e.g. CO₂)
- “Reduce/Reuse” in all aspect of plant operations ... water, cardboard, lubricants, electricity, etc.

Achieving the Goal

To achieve goal must improve the quantity and quality of recovered recycled glass:



- **Partnerships with stakeholders** to improve glass recycling/recovery rates
- Improved **data collection/analysis**
- Effective **legislative initiatives** at federal and state levels
- A **single-stream recycling best practices** “SWOT” analysis, including processing technologies
- Expanded **bar, restaurant, and hotel collection** programs
- A **consumer glass recycling “ethic”**



Recycling Collection Systems

- **Curbside single-stream recycling collection**
 - 40% of glass gets recycled into new glass containers, on average; another 40% ends up in landfills
- **Mixed glass collected in dual-stream systems**
 - yields an average of 90% of glass being recycled into glass containers and fiberglass
- **Container deposit systems**
 - color-sorted materials results in 98% glass being recycled

Source: Container Recycling Institute, 2009 Study



Competition and Costs

Glass Market Conditions

- Not impacted by global economics
- No significant exporting of cullet
- Pricing based on color, quality, and location



Competition for cullet

- Raw materials
- Container glass, fiberglass, and secondary applications
 - To help to reduce energy costs
 - To comply with enhanced air emissions standards



2009 U.S. Glass Container Recycling Rates

- **39% of beer and soft drink bottles**
- **18% of wine and liquor bottles**
- **Nearly 18% food and other bottles/jars**
- **And 31% all glass containers**

Source: U.S. EPA



Closed-Loop Glass Recycling

High-quality recycled glass =
New glass bottles and jars



=



Secondary Markets for Cullet



- Fiberglass

- Countertops and floors



- Landscaping



- Tile



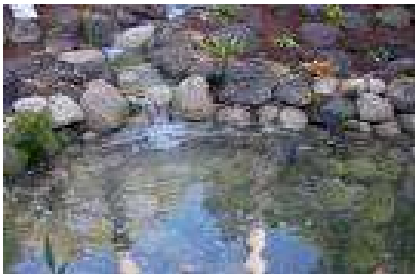
Secondary Markets for Cullet



▪ Bead



▪ Frictionators



▪ Filtration



▪ Fluxes/Additives

- Abrasives/sand blasting
- Brick manufacturing
- Roadbed Aggregate - **Diversion**
- Landfill Cover - **Diversion**

Achieving the Goal: Legislation/Advocacy



- Develop consensus legislative agenda
- Advocate for Federal Initiatives
 - Increase support for recycling
 - Improve recycling data collection/analysis
 - Improve recycling economics
 - Support recycling businesses
- Ensure legislation considers container glass recycling and end markets
 - Keep programs in place that generate high recycling rate for glass containers or other materials
- Improve glass recycling collection systems
- Encourage bar, restaurant, and hotel recycling
- Support state beverage container deposit programs

Marketing Outreach



GPI Consumer Marketing Budget 2011: \$1M

- “ASK FOR GLASS” campaign
- Partnering with glass customers and science leaders
- Consumer-focused website www.gpi.org
- Recycle Glass Month (September 2011)
- *Inside Glass Packaging* e-newsletter
- University and design school education



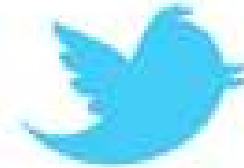
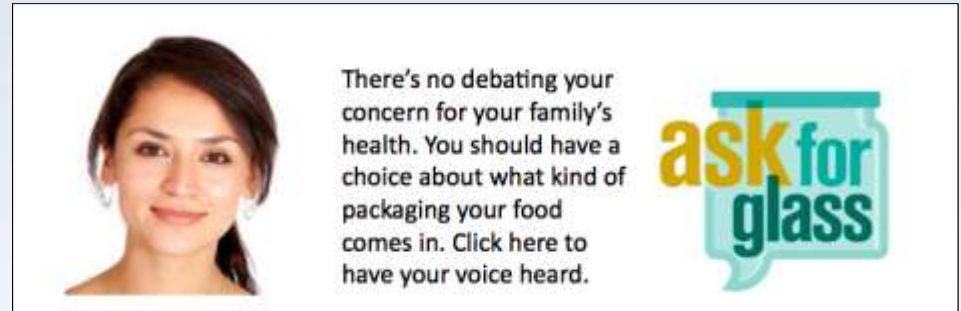
inside
glass
packaging

A Monthly Publication from
the Glass Packaging Institute



Consumer Campaign: “Ask For Glass”

- Consumer-driven campaign to encourage grocers/retailers and product manufacturers to package in glass
- Social media outreach:
 - Social networks: over 2,100 “followers”
 - Video to share virtually
 - Online surveys



Customer Advisory Council

Members to date:



DIAGEO

Diageo



Mt. Olive Pickle



Saratoga Springs Water

- Educate on benefits of glass for health and the environment
- Establish tools to promote glass as packaging choice—to CPGs and consumers
- Consider ways to increase glass recycling

Science Advisory Board

Members to date:

Yale SCHOOL OF MEDICINE



- Dr. Csaba Leranth
Yale School of
Medicine
- Dr. Wade Welshons
University of
Missouri
- Dr. John Thomas
Indiana School of
Medicine



www.gpi.org



LEARN ABOUT GLASS RECYCLE GLASS GLASS RESOURCES PRESS ABOUT US MEMBERS



choose
glass
recycle
glass

37,500

Monthly Visits

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inside glass packaging

A Monthly Publication from the Glass Packaging Institute



Americans show growing support for glass container recycling during GPI's second annual Recycle Glass Week.

GPI's second annual Recycle Glass Week, held September 11-15, marks a significant milestone in the industry's efforts to increase recycling rates and reduce energy consumption.

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inside glass packaging

A Monthly Publication from the Glass Packaging Institute

IN THIS ISSUE

Glass Container Recycling Gains Momentum

N.A. Glass Manufacturers Recognized for Their Recycling Efforts

Q4 Leadership Recognition

Top 50

Clear One

Make a Difference

Catherine

Recycling

PTC Rejoice

on Envision

Claims

We Share

Recycling

Event

We CAN

Celebrate

Week with

"Friend of

Andy's Story

...and

...and

Reports on glass container recycling and education efforts continue to pour in following Recycle Glass Week.

Head September 12-16 to build awareness and boost glass bottle recycling, Recycle Glass Week generated over 35 awareness events in 10 states. Students, consumers, glass container manufacturers, retailers and recyclers all worked together to collect glass for recycling in the message that recycling glass bottles and jars has mental and energy saving benefits. **Find out about all**

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inside glass packaging

A Monthly Publication from the Glass Packaging Institute

IN THIS ISSUE

Inventive Glass Decorator Puts Style—and the Environment—Front and Center

Mark

2010 NORTH AMERICAN GLASS PACKAGING OUTLOOK

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IN THIS ISSUE

What's Ahead: 2010 North American Glass Packaging



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A Monthly Publication from the Glass Packaging Institute

IN THIS ISSUE

Celebrate Recycle Glass Week

Join in The Top 5 Ways to Celebrate Recycle Glass Week

Find out a Hunt Prize Winner on Monday, September 13th

2010 Clear Choice Awards Winners Announced Tuesday, September 14th

Friends of Glass Honorees Revealed Thursday, September 16th

Winning Glass Recycler? Continue to Page 14

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inside glass packaging



Competitive Intelligence Alerts



Competitive Intelligence Report

Thursday, March 24, 2011

City Of Boise To Consider Paid Curbside Glass Recycling

According to "IdahoStatesman.com," the city of Boise is still working out details on a curbside glass-recycling program. A plan will come before the Boise City Council this summer, said Vince Trimboli, Public Works department spokesman. "Our Curb It program has been tremendously successful and to maintain that success we must move to include glass recycling, which is why I have instructed Public Works to develop a plan to allow customers that option," Mayor David Bieter said in a news release. "If Boise is to truly be an environmentally friendly city, we must find a local method to recycle this major component of our solid waste."

[Read the Article](#)



Keep it Organic Website



This site is dedicated to providing the organic shopper with information about the right packaging choices for keeping your organic foods, organic. Many packaging choices may contain synthetic chemicals that migrate into foods and beverages, thus altering the natural organic integrity of your foods. In contrast, glass containers have been in use for 200 generations and are composed of naturally occurring substances and do not contain synthetic chemicals.

Researchers Say PET Is Not Sustainable

Published: 22 October 2010

Category: [PET \(polyethylene terephthalate\)](#), [Sustainability](#)

According to "Science 2.0," polyethylene terephthalate (PET) is the third most common synthetic polymer with the key aromatic component being derived from petroleum or natural gas. There is a concern that these fossil sources may be running out in the not too distant

About

This site will provide you with important facts about organic foods and beverages, information about current trends in the organic industry and we hope, an objective look at the organic market as it relates to consumer interests.

[Read More »](#)

Contact Us

This site is a resource for people



Recycle Glass Month



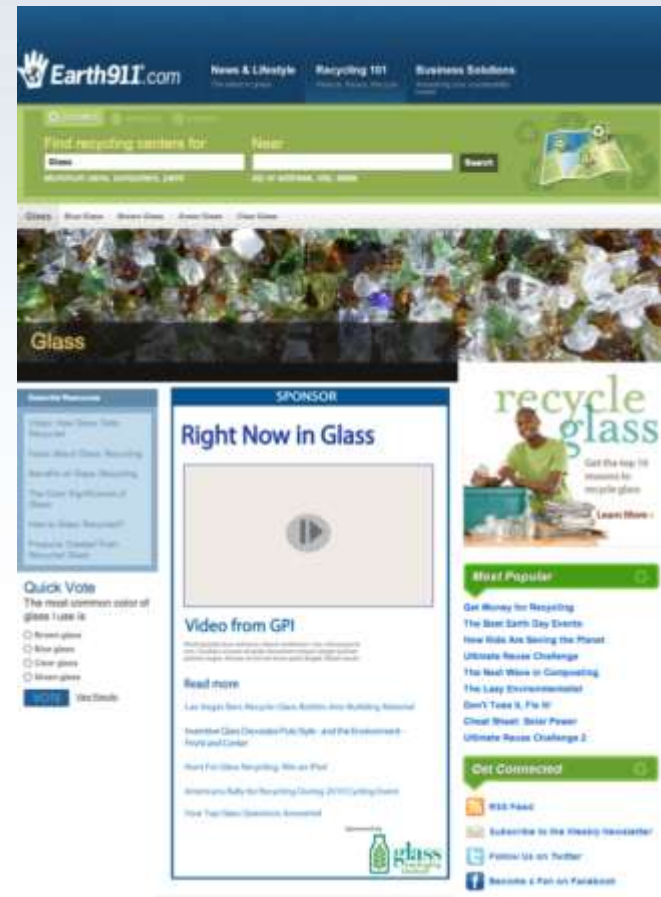
2011 Activities:

- Partnership with Earth 911
- 2011 Clear Choice Awards
- Friends of Glass recognition



Glass Recycling Splash Page Features GPI

- Home page feature for Recycle Glass Month
- Earth911.com has **4.4 million unique visitors annually**
- Sponsored/non-sponsored content on “Glass Recycling” section
- One glass **feature story per quarter**
- Social media connections
- GPI Ads in rotation



Clear Choice Awards



2011 Categories:

- Beer
- Wine
- Food
- Carbonated Beverage
- Non-Carbonated Beverage
- Distilled Spirits
- Flavored Alcoholic Beverage
- Organic Food or Beverage
- Fragrance/Cosmetics/Other
- Conversion Recognition



Entries judged by expert panel on:

- innovation
- package design
- shelf impact



Tank No. 7 Farmhouse Ale

Tank No. 7 Farmhouse Ale

Winner

Beer Category

Boulevard Brewing Co.

Glass Supplier: Verallia



Freemark Abbey 125th Anniversary Blend

Freemark Abbey 125th
Anniversary Blend
Winner
Wine Category

Jackson Family Wines
Glass Supplier: Verallia



Sir Kensington's Gourmet Scooping Ketchup

Sir Kensington's Gourmet Scooping Ketchup

Winner

Food Category

Kensington & Sons LLC

Glass Supplier: Leone Industries



H-E-B Dr. B[®]

H-E-B Dr. B[®]

Winner

Carbonated Beverage Category

H-E-B

Glass Supplier:

Vitro Packaging, Inc.



Kyäni Sunrise®

Kyäni Sunrise®

Winner

Non-Carbonated Beverage
Category

Kyäni Inc.

Supplier: Vitro Packaging, Inc.



TruBee Honey

TruBee Honey

Winner

Organic Food or Beverage
Category

TruBee Honey

Glass Supplier: O-I



Finlandia Vodka

Finlandia Vodka

Winner

Distilled Spirits Category

Finlandia Vodka

Worldwide Ltd.

Glass Supplier: O-I



Calypso Bay

Calypso Bay

Winner

Flavored Alcoholic Beverage

Category

American Vintage Beverage Co.

Glass Supplier:

Anchor Glass Container



Espirit D'Oscar

Espirit D'Oscar
Winner
Cosmetics or Fragrances
Category

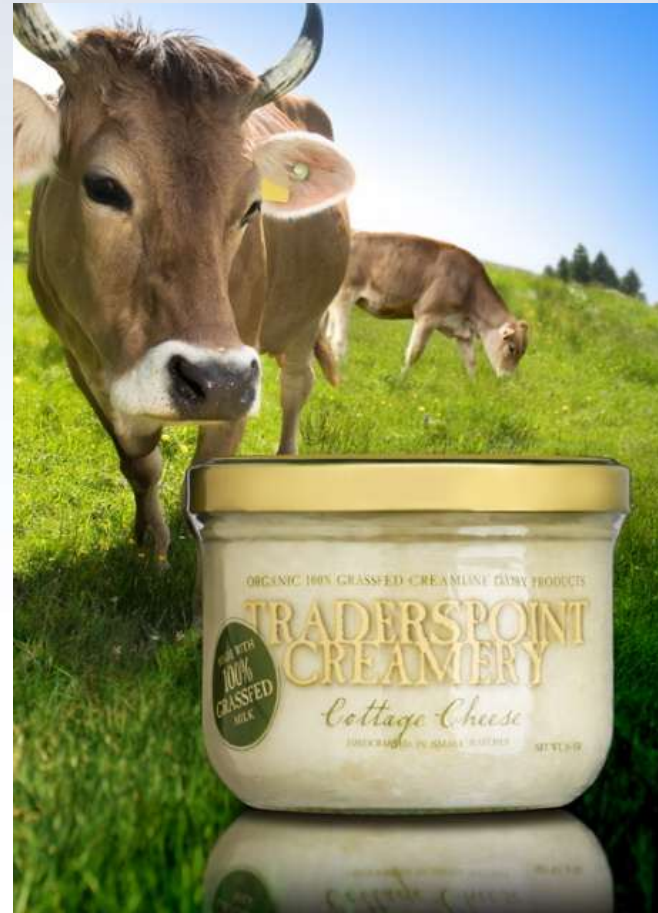
Oscar de la Renta
Glass Supplier:
Vitro Packaging, Inc.



Traders Point Creamery Cottage Cheese

Traders Point Creamery
Cottage Cheese
Winner
Conversion Recognition
Category

Traders Point Creamery
Glass Supplier: Verallia





Glass Factory Recognition



2011 Friends of Glass



Honoring those companies, organizations, and persons making significant and innovative efforts to promote or participate in glass container recycling for bottle-to-bottle use

Best Friend of Glass:

Saratoga Water Company

Eden Foods, Inc.

Two Guys in Vermont

Organization:

Blue Skies Recycling

Community Program:

"Glass Act"

Website:

Ecotopia

Restaurant:

Pete's New Haven Style Pizza



2011 Friends of Glass: Best Friends of Glass



■ **Saratoga Spring Water**, packaged in iconic blue glass bottle, has committed to reduce their environmental impact, including waste reduction and packaging in 100% recyclable glass



■ **Eden Foods** now packages its organic crushed tomatoes and sauces in amber glass jars to protect flavor and nutrients from light damage and to avoid BPA



■ **Two Guys in Vermont**, a line of all natural soups, packages in glass to avoid BPA and because glass is sustainable



2011 Friends of Glass: Organization/Community Program



Blue Skies Recycling



Marion County, OH

- **Blue Skies Recycling** has committed to high-quality recycling at Busch Stadium, the Jones Dome Convention Center and 35 bars/restaurants targeting glass bottles, cardboard, and organics
- **Glass Act** is a county initiative started in January 2011 to recycle glass containers from over 30 bars/restaurants—and growing.



2011 Friends of Glass: Website and Restaurant



- **Ecotopia** is a free-to-play eco-conscious Facebook game. First social media game to encourage environmental good. Ecotopia TV shows environmental videos, including GPI's Glass Recycling PSA



- **Pete's New Haven Style Apizza**, a small chain of East Coast restaurants, is committed to only carrying beverages in glass bottles—and to recycling them along with everything else



GPI Academic Program: Participating Universities



Lecture Program

Current Topics

- Glass Container Overview
- Glass Fundamentals
- Surface Treatment
- Container Light Weighting
- Glass Container Retail Trends
- Labeling & Decorating Techniques
- Design Criteria
- Recycling
- Pressure Sensitive Labeling
- Annealing Glass Containers



Plant Tours



Mohawk College/O-I
Brampton, Ontario



University of
Florida/Anchor
Jacksonville



San Jose State
University/Gallo
Modesto



Glass Labs: University of Wisconsin - Stout & Cal Poly, San Luis Obispo



Bottle Measuring Equipment

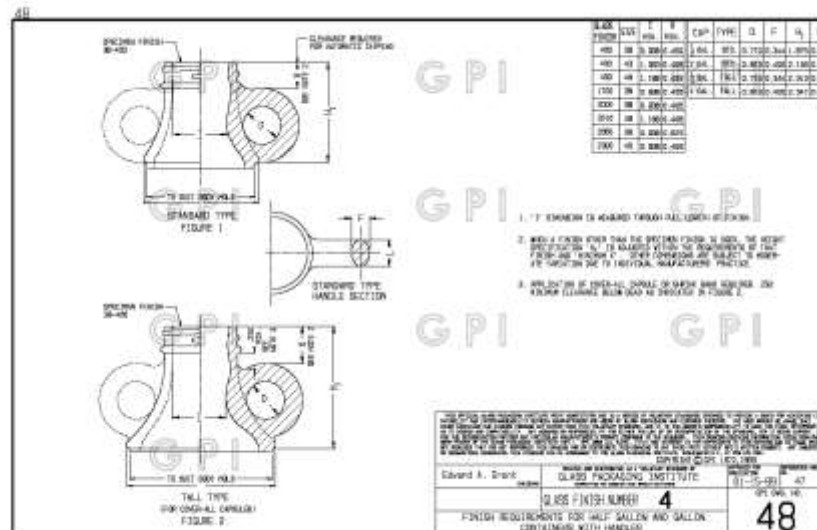


Ongoing GPI Programs

- Design & Specifications
- Flexo Color Guide – Edition X
- Hazard Analysis and Critical Control Points

GPI Design & Specifications

- GPI Design & Specifications Committee
- Voluntary standards provide a basis for achieving compatibility and interchangeability between manufacturers and users of glass containers and closures
- Other container and closure designs may differ
- Drawings contain information taken from one or more prints of the GPI, which owns all right, title and interest in the copyrights
- Design & Specifications available for download on GPI website: www.gpi.org



Hazard Analysis and Critical Control Points

- HACCP used in food industry to identify potential food safety hazards, so that key actions, known as Critical Control Points, can be taken to reduce or eliminate the risk of the hazards being realized
- System is used at all stages of food production and preparation processes including **packaging**, distribution, etc.



GPI HACCP Task Group

- HACCP driven by global customers & government agencies
- Vehicle to allow glass container companies in North America to come together to respond
- Has provided opportunity to design a system that can be used in place of the one developed by non-glass manufacturing personnel
- Glass HACCP information available on GPI website: www.gpi.org

Glass ... Endlessly Recyclable



www.gpi.org

