

What's the Real Story on Glass?

SWANA - Illinois Chapter Workshop

March 22, 2016

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Glass ... 100% and endlessly recyclable



Glass Containers: Industry Overview

Glass Containers: Industry Overview

- U.S. glass container manufacturers operate 46 plants in 22 states
- Annual \$5.5 billion industry
- Approximately 28 billion glass containers manufactured in 2015
- Employs 18,000 Americans in high-paying, benefit-provided careers
- Glass bottles reduced in weight by more than 40% between 1970 and 2000



Glass Container Recycling

Why Recycle Glass Containers?

The Glass Recycling Lifecycle

Glass is made of natural materials, including sand, limestone, soda ash and recycled glass. Glass containers are infinitely recyclable without loss to quality or purity.



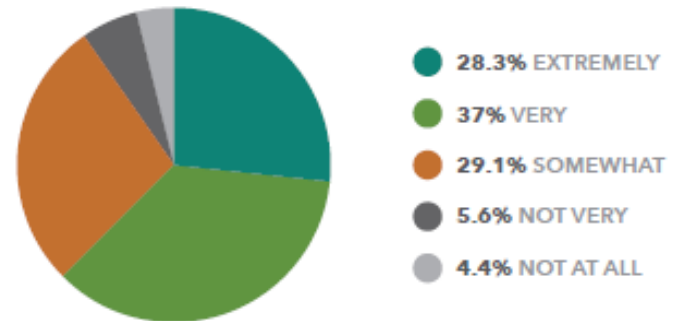
*A materials recycling facility is a specialized plant that receives, separates and prepares recyclable materials for manufacturers.

- 100% recyclable and can be recycled endlessly without any loss in purity or quality
- Can be substituted for up to 95% of raw materials
- Reduces emissions and consumption of raw materials, extends the life of plant equipment, such as furnaces, and saves energy
- 2.4 million tons of recycled glass used annually to make new bottles and jars

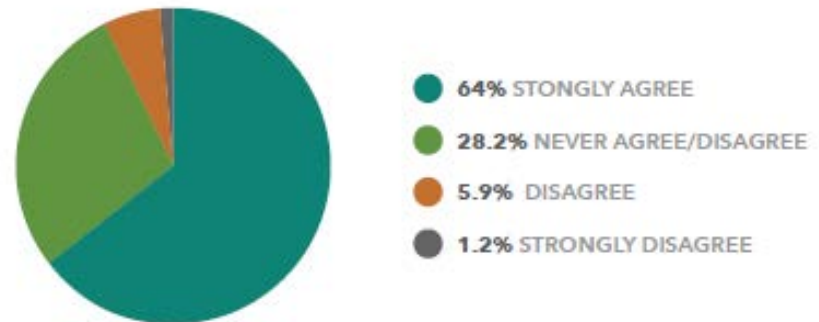
Glass Containers: Consumer Attitudes

- 65% of consumers say packaging made from renewable/recyclable sources positively influence product choice
- Consumers understand that glass is an environmentally friendly packaging choice
- 64% agree that glass is 100% recyclable and can be recycled endlessly

Does use of renewable or recycled materials have an influence over your choice of brands, products?



Glass is 100% recyclable and can be recycled endlessly without loss in quality or purity



*Source: GPI partnered with EcoFocus Worldwide Research. Results are from sample of over 4,000 national representative adults ages 18-65. Conducted Spring, 2013.

Glass Container Recycling: Consumer Attitudes



Americans want to recycle glass

91%

of consumers
say that recycling
is an important
part of conserving
natural resources

90%

say that it is important to
recycle materials rather than
sending them to the landfill.

95%

of those who live in a
community which recycles
glass say glass should
continue to be collected
by recyclers.

91%

say finding ways to avoid
wasting our natural
resources is important.

Glass is
made from
natural resources



Helps Communities Meet Recycling Goals

Glass helps communities meet their recycling goals



Glass bottles and jars represent up to
25% of the total weight
of the recycling stream



It costs only less than .15¢
per person per pick up to
recycle glass at the curb



of Americans have access
to single-stream recycling

ZERO

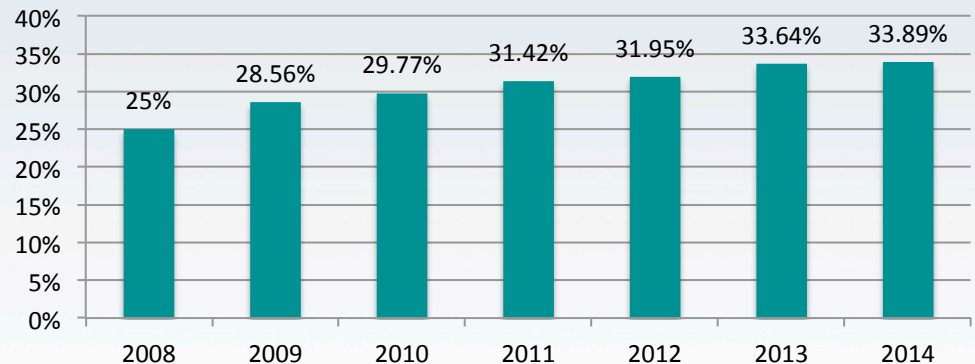
Waste recycling goals
cannot be achieved without glass



Glass Container Recycling Facts

- 59 glass processors in 29 states operated by 22 companies
- Recycling rates*:
 - 41% of beer and soft drink bottles
 - 34% of wine and liquor bottles
 - 34.1% of all glass containers
 - 10 states with refund programs average 63% glass container recycling; other states average roughly 24%

Glass Container Industry Average Cullet Use (Dec.2008 – Dec. 2014)

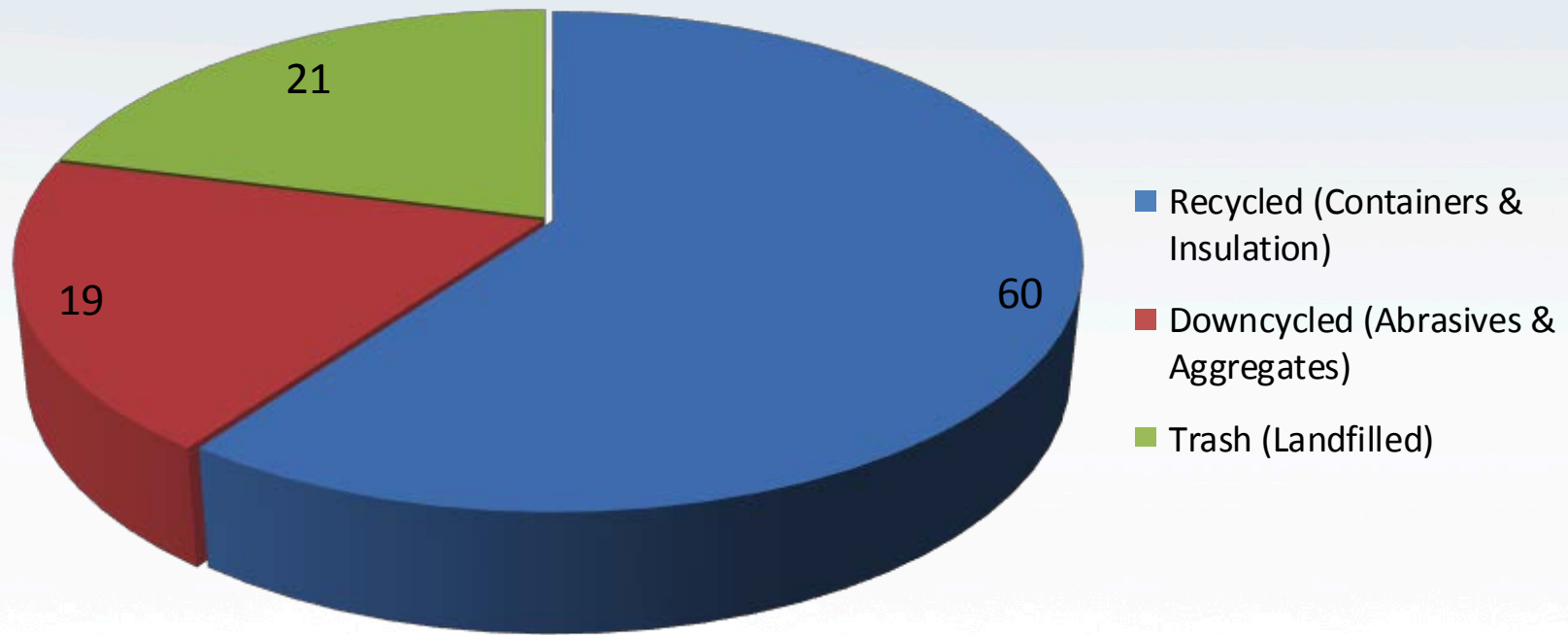


Average recycled content of glass containers risen from 26% in 2008 to 33% at the end of 2014

**Sources: U.S. EPA, Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012, and Container Recycling Institute*

End-Markets for Recovered Glass

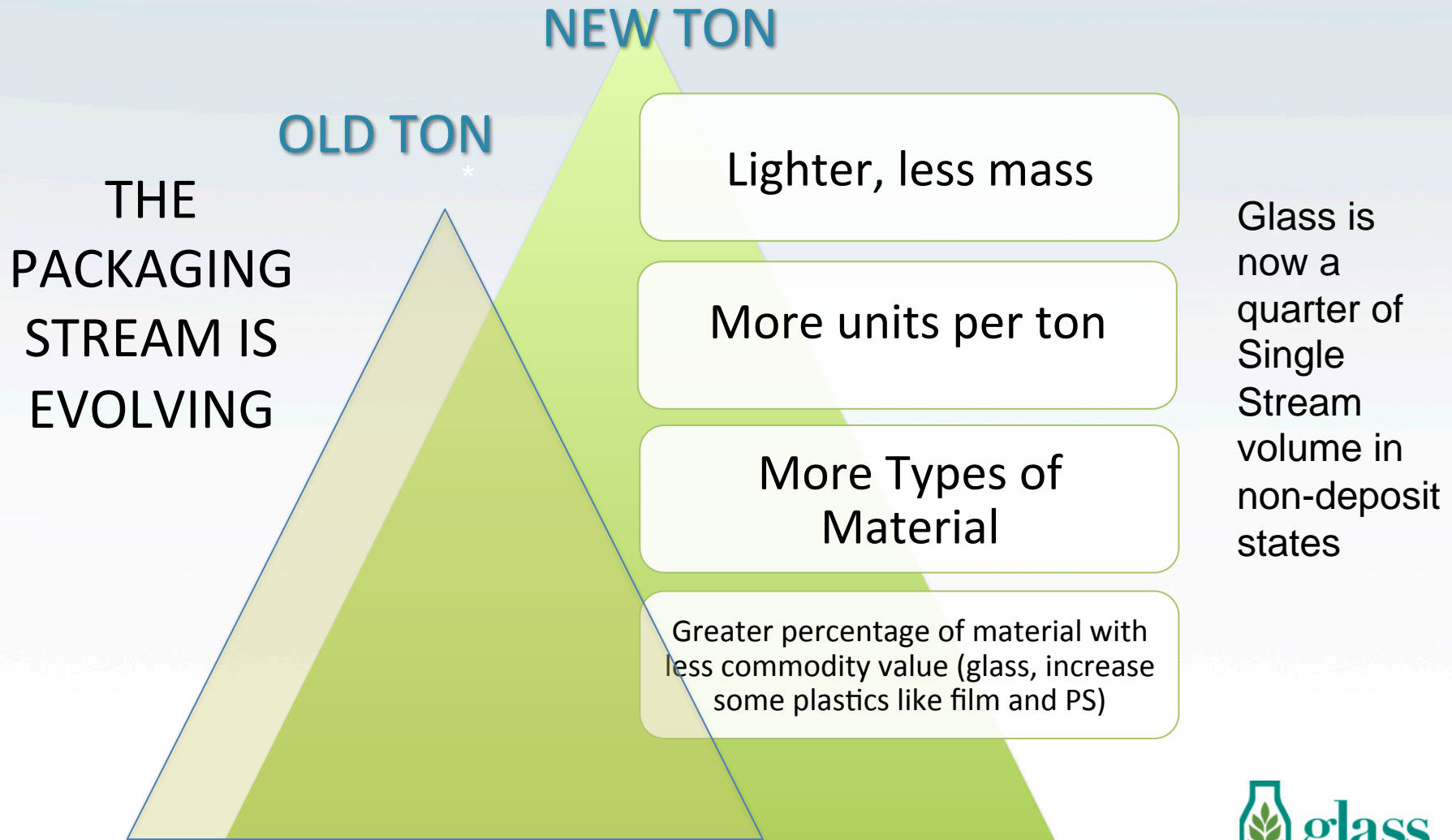
Uses for Glass from Single Stream Programs



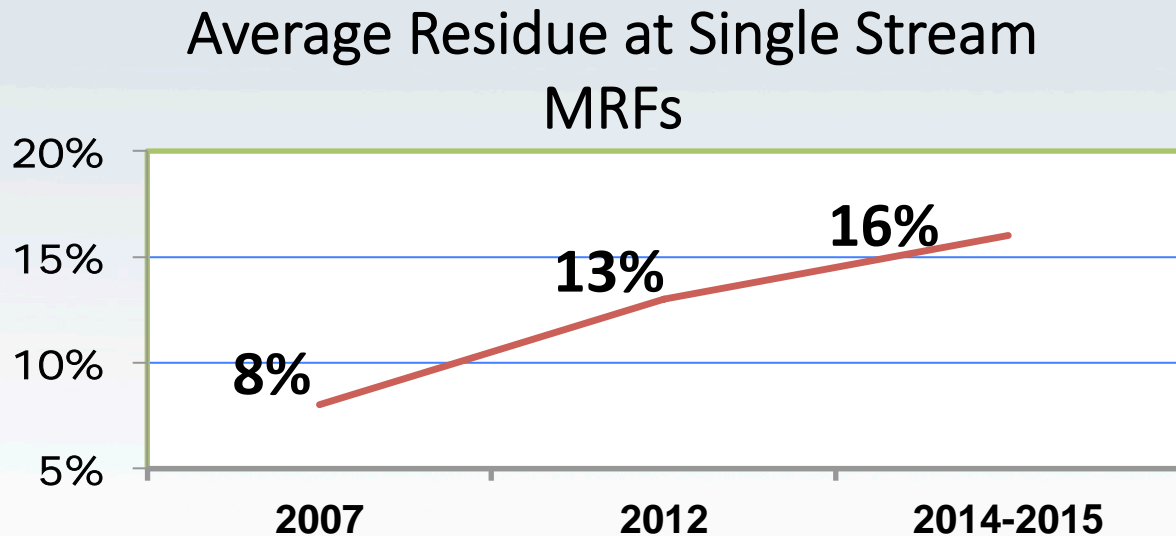
Source: Container Recycling Institute

Glass Container Recycling: Challenges

Single Stream Recycling: Packaging Stream



Single Stream Recycling: MRF Processing Challenges



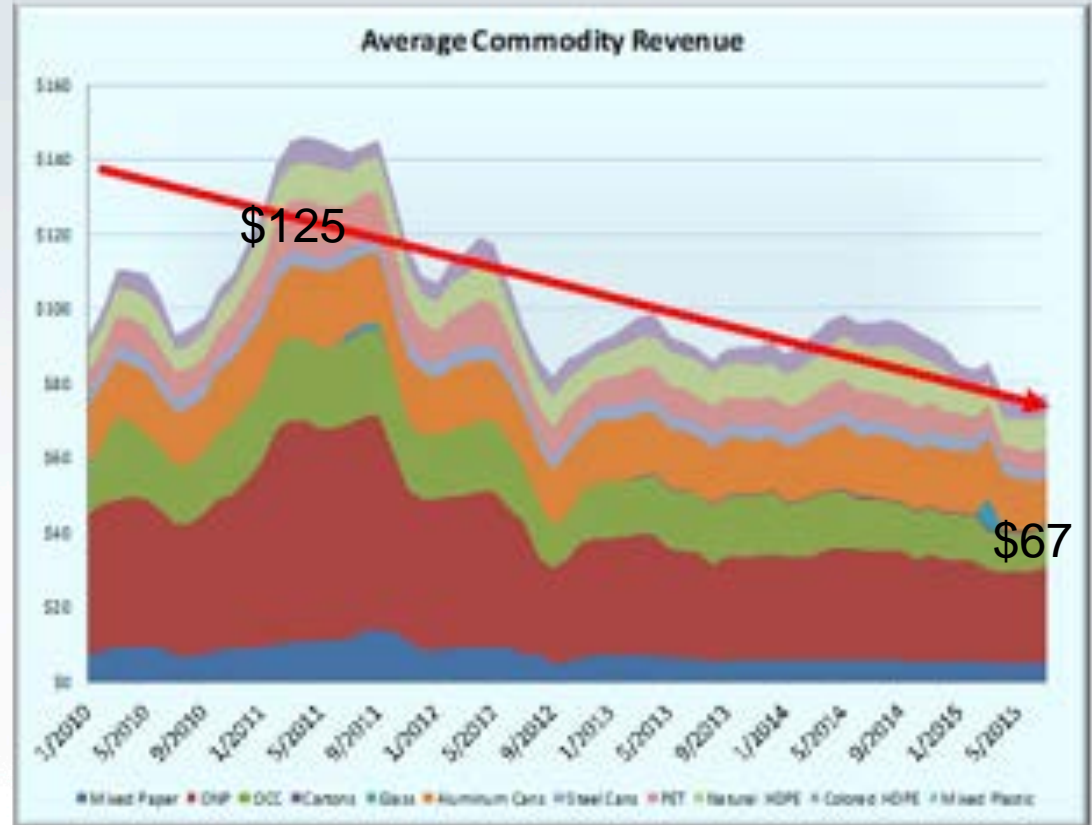
- Increased contamination of inbound supply
- As fiber decreases, glass is growing percent of recycling stream
- SS MRFs initially designed to “remove” glass, not sort it
- Glass clean up systems are expensive to maintain

Sources: 2007 Comparative Study on Public vs. Private MRFs, 2012 GAA study on Wisconsin-Area MRFs, ISRI Moore Presentation April 2015



Single Stream Recycling: Commodities Values

- Commodities from curbside recycling processing economics have deteriorated for six consecutive years
- Over \$37/ton of commodity value lost per avg. single stream ton
- Over \$1B value loss to the industry per year



Single Stream Recycling: “Cullet” Processor Challenges

- Glass is “negatively sorted” commodity so disproportionately impacted by contamination
- Majority of MRFs have a glass breaker with 2” screens so everything smaller ends up in the glass stream
- “Glass” stream can contain up to 50% unwanted material:
 - Organics – shredded paper, food, etc.
 - Plastics – syringes, needles, caps, etc.
 - Ceramics – cups, plates, etc.
 - Moisture – winter, comes in with organics/shredded paper



Post MRF, prior to glass processor

Landfilling: Environmental Costs & Economic Benefits

Climate Change

- Landfilling valuable commodities contributes to GHG emissions
- According to the EPA, landfills are the third largest source of U.S. methane emissions (18%)
- Nine U.S. states have a moratorium on landfills



Landfill Owner Benefits Financially

- Landfill business has higher short-term profitability, but results in long-term degradation to recycling

Glass Container Recycling: GPI Initiatives

Improve Supply Chain Value & Accessibility

Location Type

- ☐ GPI Member Manufacturing Plant
- ☐ Recycled Glass Processing Facilities
- ☐ Fiberglass Manufacturing Facilities

Zipcode / Proximity

Postal code

Distance

100

Miles

State

Show All

SEARCH

RESET

www.GPI.org:

Connecting the dots to the glass recycling chain



Partnership With Fiberglass Industry

- Operates 39 plants in North America
- Recycled glass is a critical manufacturing input
- Similar to the glass container industry, requires properly sorted glass that meets industry specifications
- Purchased roughly 750,000 tons of recycled glass in 2015



MRF Initiatives in North Carolina

- GPI to provide grants to 2 in-state MRFs to improve glass recycling (Asheville and Raleigh locations)
- Report out from MRFs to highlight improvements in glass recovery – grant money to improve glass sorting and adjustments to improve quality of glass output
- 3 glass container plants in state



Targeted Outreach & Glass MRF Spec

- Outreach to state and local recycling officials & organizations
- Establishing a “Glass MRF Spec” (in process through ISRI)



Glass Recycling Coalition

- Glass Industry Value Chain:

- Diageo
- New Belgium Brewing
- Glass Packaging Institute
- Heineken
- Strategic Materials, Inc.
- Sierra Nevada
- Ripple Glass
- Owens Corning Fiberglass
- Ardagh
- O-I
- NAIMA (Insulation Manufacturers Association)
- Gallo
- Goose Island
- Rocky Mountain Bottle Co.



DIAGEO



HEINEKEN



- Recycling Industry:

- The Recycling Partnership
- Waste Management
- Republic
- NW&RA



THANK YOU!

Learn more about GPI and glass
container recycling at

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or contact **lbragg@GPI.org**

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