



Glassman America 2013

Burying Treasure: From 'Best Practice' to 'Bad Idea'
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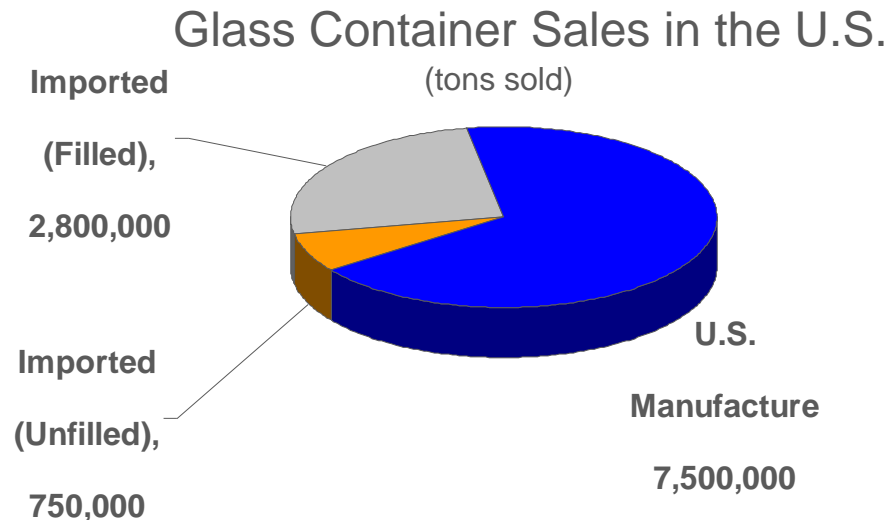
Las Vegas, September 11, 2013

- 48 glass container plants in 22 states comprise a \$5,500,000,000 dollar industry.
- 102 U.S. glass container furnaces produce approximately 34,000,000,000 glass food, beverage, cosmetic, spirits, wine, and beer containers annually.
- The U.S. industry employs approximately 18,000 salaried and represented hourly employees in its glass container plants, warehouses, sales forces ... along with thousands more in its supplier companies.



Source: GPI

Annual Beverage Container Sales in the U.S.



- **Glass:** about 11,000,000 tons / 34,000,000,000 units.
- **Plastic:** about 1,800,000 tons / 65,000,000,000 units.
- **Aluminum:** about 1,500,000 tons / 95,000,000,000 units.
- **Totaling over 13,000,000 tons or about 200,000,000,000 units.**
- **Approximately 111,000,000,000 of these beverage containers end up in landfills each year ... with a value of about \$2.3 billion.**

Sustainability and Business Case for Recycled Glass

- Recycled glass (i.e., “cullet”): 100% recyclable, and can be recycled endlessly.
- Over a ton of natural resources is saved for every ton of glass recycled.
- Energy usage drops 2-3% for every 10% recycled glass used in the manufacturing process...and reduces NOx, SOx & PM emissions.
- Six tons of recycled container glass remelted equals one ton of carbon dioxide / greenhouse gas reduced.



Verallia's Commitment to Sustainability - Cullet

Verallia is focused on obtaining more 'uncontaminated' cullet.

➔ Cullet Supply Chain.

- Robust market.
- Buy every ton we can find.

➔ Challenges with Municipal Solid Waste (MSW) Single Stream.

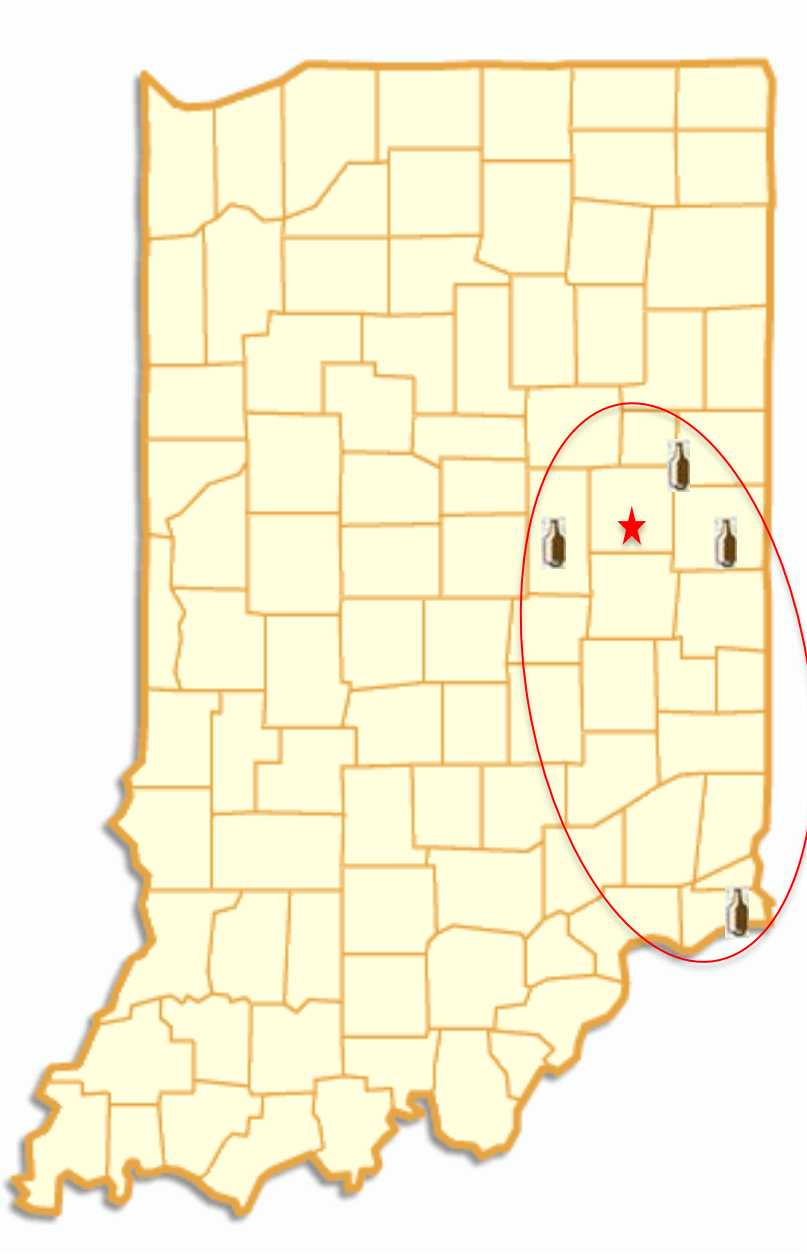
- Here to stay / Compatible with Bottle Bills.
- Collection Rate v. Recovery Rate.
- Contamination is a serious problem.

➔ Support bar & restaurant programs and multiple family dwelling recycling programs ... but volumes are low.

➤ *Bottle Bills are necessary to achieve near-term step change in recovering recyclables from the MSW stream.*



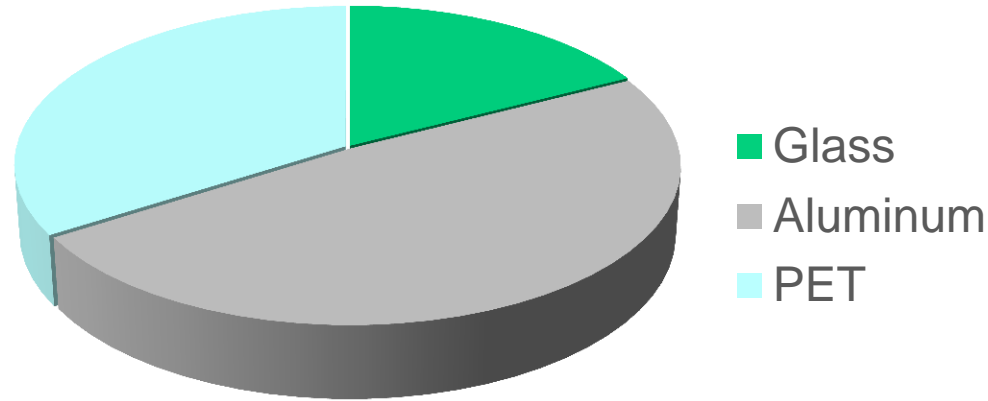
COLLECTION RATE V. RECOVERY RATE: A CASE STUDY



Indiana Is An Important Glass Container Manufacturing State!

- Verallia Muncie (North American Headquarters)
- Verallia Dunkirk (beer & food containers)
- O-I Lapel (beer, food and spirit containers)
- Ardagh Winchester (food and spirit containers)
- Ardagh Lawrenceburg (spirit containers)
- *Millions of glass containers produced each day*
- ***JOBS: OVER 1,600 INDIANA EMPLOYEES***

Annual Beverage Container Sales in Indiana in Units

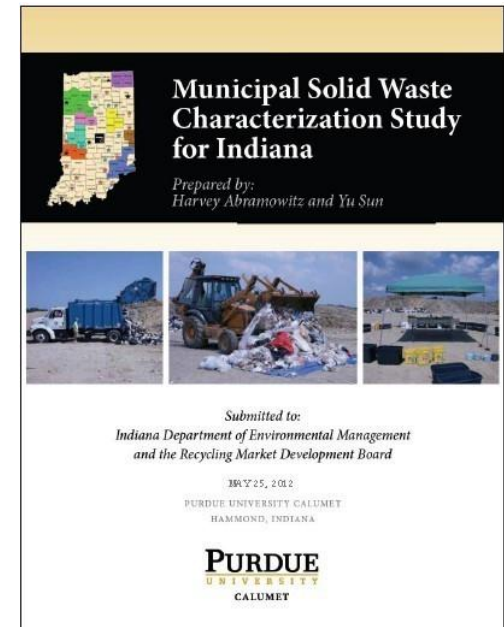


- ➔ **Glass:** about 200,000 tons / 720,000,000 units.
- ➔ **Aluminum:** about 30,000 tons / 2,000,000,000 units.
- ➔ **Plastic:** about 38,000 tons / 1,400,000,000 units.
- ➔ **Totaling about 270,000 tons / 4,200,000,000 beverage containers sold annually in Indiana.**

Purdue University

2012 Municipal Solid Waste (MSW) Study

- A rigorous study looking at Indiana solid waste at four landfills.
- Landfilled MSW was sorted:
 - By category (type)
 - By origin (location) of material
- The study indicates that about 8,600,000 tons of MSW are landfilled in total each year.



<http://www.in.gov/idem/recycle/2358.htm>

Purdue University

2012 Municipal Solid Waste (MSW) Study (continued)

→ MSW Composition by weight:

○ Plastic = 16.1%

○ Metals = 5.7%

○ Glass = 3.0%

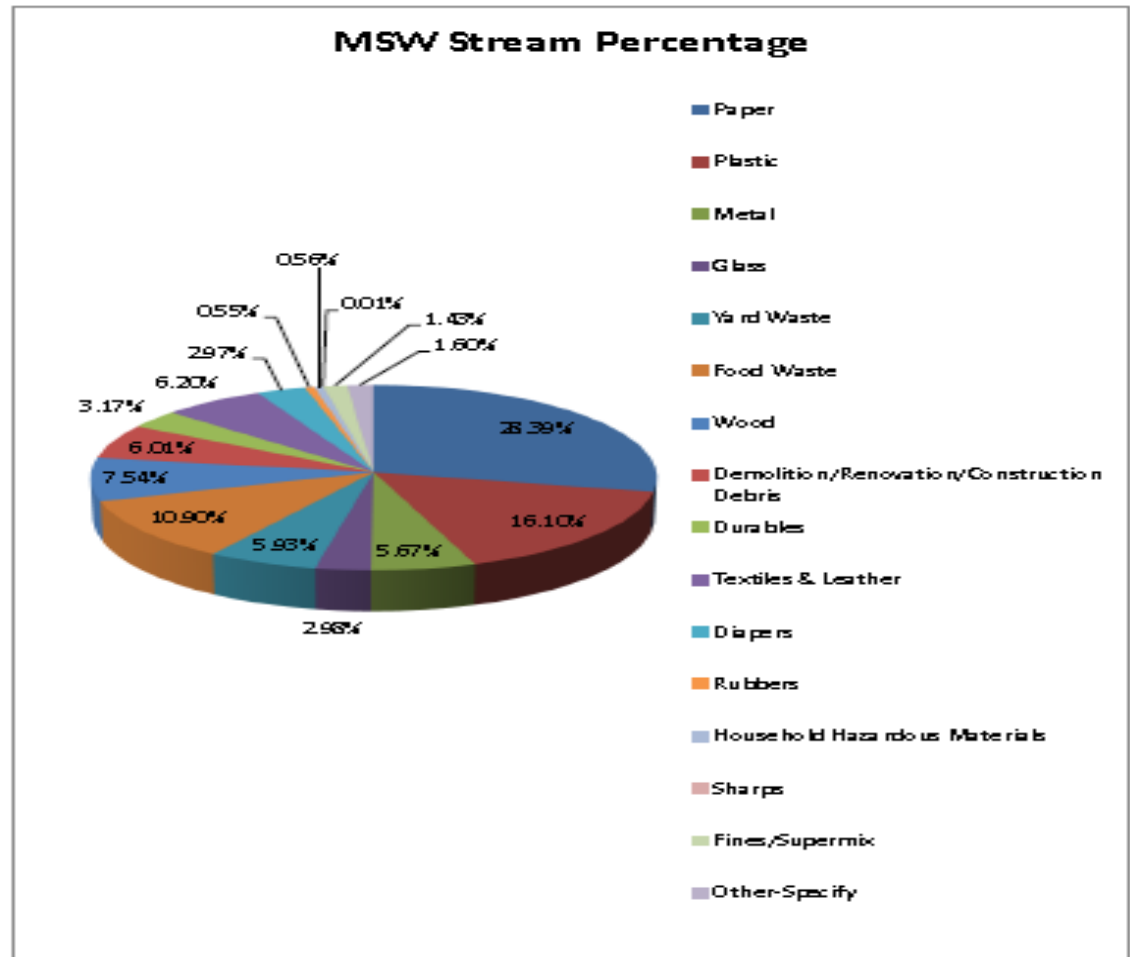


Figure 3-3 Overall MSW Composition for the State of IN (includes imports)

Verallia Analysis Indicates That:

- ➔ Based on industry data about **3,000,000,000** aluminum, glass, and PET beverage containers are landfilled in Indiana every year - more than 200,000 tons of material.
 - Worth approximately **\$60,000,000** as recycled feedstock commodities.
- ➔ Based on the Purdue Study about **5,000,000,000** (or 260,000 tons) of aluminum, PET and glass beverage containers worth more than **\$100,000,000** are landfilled every year.
- ➔ Whether the number is 3 or 5 billion, nobody thinks it's a good idea to bury treasure in landfills.
- *Is there support to stop burying this treasure NOW ... to solve an obvious problem?*



Indiana Poll Summary

- ➔ **Managed by Ball State University Bowen Center using Princeton Survey Research Associates.**
- ➔ **600 sample (4.5% M of E); Conducted 12/12 – 12/16/2012.**
- ➔ **85.7% say “state legislation promoting more effective recycling programs in Indiana” is very or somewhat important.**
- ➔ **73% say they support deposit and redemption programs, with 24% saying they are opposed.**
- ➔ **Preference to return beverage containers / receive deposit refund:**
 - **Take to redemption center (45%).**
 - **Return where bought (36.3%).**
 - **Either place (12.6%).**

Indiana Poll Summary (continued)

➔ **Tested seven possible outcomes associated with a refundable deposit program - very strong support for all (87% - 78%).**

- Keeping three billion beverage containers out of landfills (87%).
- Reducing litter (86.9%).
- Creating new jobs associated with redemption (86.2%).
- Protecting existing jobs and attracting manufacturing and transportation jobs (86.1%).
- Dollars for church groups, Boy and Girl Scouts, etc. (85.9%)
- Increasing recyclable materials for manufacturers, thereby reducing energy use and pollution (80.5%).
- New revenue to State to improve other environmental programs (77.9%).

Indiana Poll Summary (continued)

→ Other key findings:

○ Do voters see a refundable deposit program as a tax?

- No, it is not a tax (67.7%).
- Yes, it is a tax (26.4%).

○ What are the political implications of supporting a refundable deposit program?

- No effect on voters (62.1%).
- Voters more likely to support candidate (29.5%).
- Less likely to support candidate (4.5%).

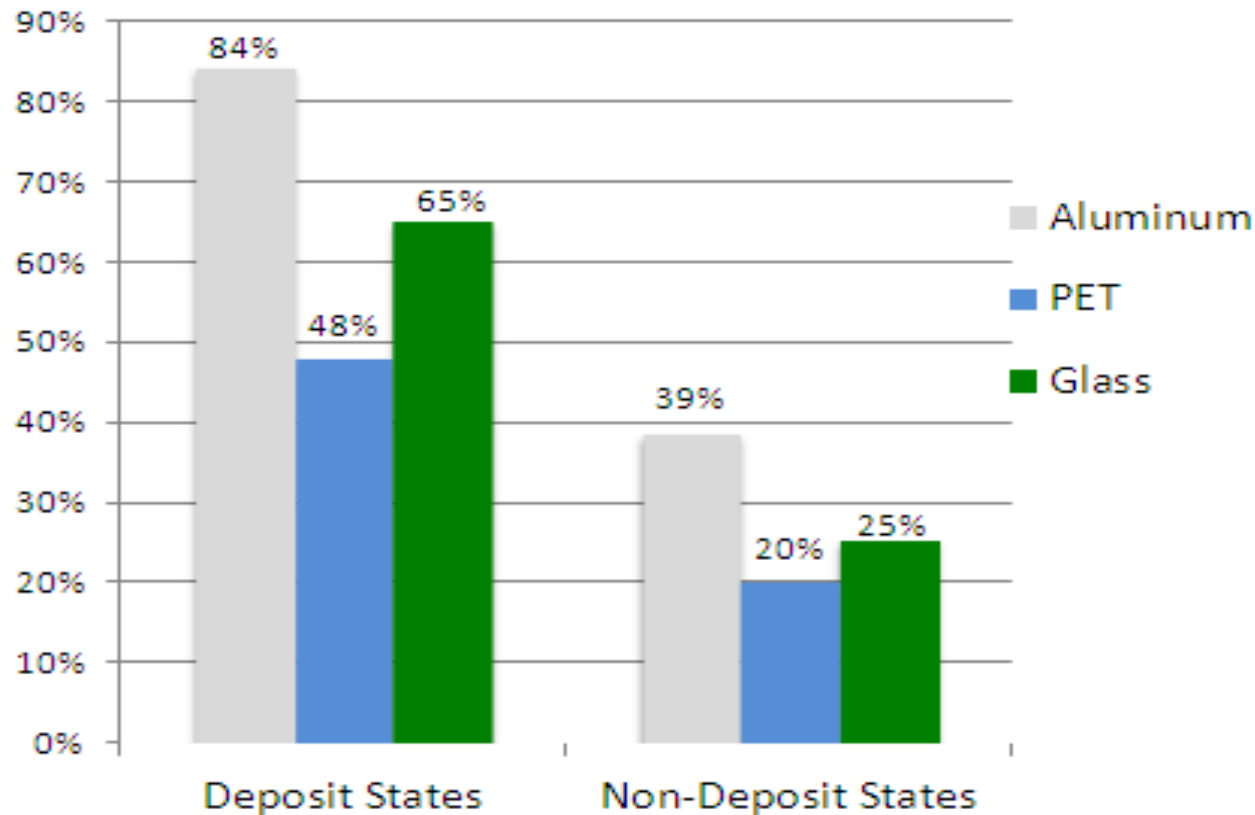
Recycling and Recovery of Beverage Containers Today

➔ **A Bottle Bill is the most efficient / effective beverage container collection / recovery system.**

- Average Beverage Container Recovery Rates in Bottle Bill States exceed 80%.
- The refundable nickel is a very powerful incentive with little additional education required.
- 65% of all US glass cullet comes from just 10 'bottle bill' states.
- Demand for high quality recycled aluminum, plastic, and glass is "HIGH" / exceeds supply as manufacturers strive to increase the recycled content of new beverage containers.



Deposit States Have Higher Beverage Container Recycling Recovery Rates



Source: Container Recycling Institute, 2013

Order of Magnitude: Verallia's Dunkirk, IN Plant Would Buy Much More High Quality Indiana Cullet If Available

- ➔ **Two very large state-of-the-art Oxy-fuel furnaces.**
 - Production about 360,000 tons of glass per year*.
 - Produces about 4,000,000 units (bottles/jars) per day.
- ➔ **In 2012 Dunkirk purchased about 58% virgin materials (i.e., sand, soda ash and limestone), plus 42% cullet.**
 - About 15% of this cullet originated in Indiana ... most was sent to Illinois for contamination inspection / color sorting.
 - About 85% of cullet was imported from IL, MI, NY, OH & PA.
- ➔ **Dunkirk could use up to 90% cullet.**
- ➔ **Broad Ripple Bar & Restaurant Glass Collection ... a successful program, but:**
 - Generates 5.6 tons per month, or 67 tons annually.
 - Equates to 97 minutes of Dunkirk's 24 / 7 / 365 production.



* Based on Title V permit

Three States Recycling Systems

Single Stream v. Bottle Bill and A Projection

Minnesota Actual

Population 5,300,000

Strong Commitment to Single Stream

All public entities (schools, cities, towns, counties, airports, etc.) are responsible for making recycling available;

Must have a plan and set goals (e.g., 80% for beverage containers).

75 Material Recovery Facilities (MRF's), developed at significant expense.

Pay As You Throw Laws (PAYT).

Landfill ban on source separated materials.

\$7,000,000 in recovered recycled materials sold annually.

Education = 17% of recycling budget (\$3.3 of \$20.3 million).

Recovers only 38% of all glass; expect PET and Aluminum to be proportional

74% live in 6 MSA's – urban systems



Iowa Actual

Population 3,000,000

1979 Bottle Bill Recovers 86% of glass and aluminum. (Non-carbonated PET not yet covered.)

Commodities worth over \$30,000,000 and Unredeemed deposits of: \$14,000,000 each year.

56% live in 9 MSA's, rural systems



Indiana Projected

Population 6,500,000

Implement a Bottle Bill covering glass, pet and aluminum -

Average Recovery 82%.

Commodities worth approximately \$60,000,000. Unredeemed deposits, \$38,000,000 each year.

73% live in 17 MSA's., urban system



Sources of MN information:

http://www.pca.state.mn.us/index.php?option=com_k2&view=item&id=219

<https://www.revisor.mn.gov/statutes/?id=115a&view=chapter>

<http://www.pca.state.mn.us/index.php/data/score/recycling-in-minnesota-the-score-report.html>



Recycling / Recovery Rates

Next Step – Evaluating Opportunities and Challenges

- ➔ **No changes in Indiana over the next decade will mean:**
 - **About 30,000,000,000** aluminum, plastic, and glass beverage containers will needlessly / wastefully end up in landfills.
 - Wasting approximately **\$600,000,000** of commodity feedstock.
 - Foregoing **\$380,000,000** in projected unredeemed deposits.
- ➔ **Why not build on the experience of the 10 bottle bill states ... avoid landfilling billions of aluminum, plastic, and glass beverage containers over the next decade?**
- ➔ **An Indiana bottle bill would not only support Indiana business and jobs, but would also demonstrate a commitment to sustainability through reduced energy consumption, air emissions, use of virgin raw materials, and waterway and roadside litter.**

Recycling / Recovery Rates

Next Step – Evaluating Opportunities and Challenges (continued)

- ➔ **Continuing status quo / stalemate...what are the 'real' roadblocks to dramatically improving rates for high quality / high quantity commodity feedstock?**
 - Is a bottle bill really a tax?
 - Does a bottle bill reduce brand owner sales?
 - Does a bottle bill increase brand owner costs?
 - How much fraud is there in a bottle bill state?
 - How should redemptions be handled?
 - Is there a cleanliness issue at redemption centers in bottle bill states?
 - Are bottle bills compatible with single stream systems?
 - Are bottle bills compatible with Extended Producer Responsibility (EPR) systems?

Verallia's Commitment

- ➔ Verallia stands ready **now** to actively participate in any dialog / process to materially improve the recycling / recovery rates of high quality aluminum, plastic, and glass feedstock commodities.
- ➔ Continued stalemate should be unacceptable to all stakeholders ... we need to stop burying this treasure.