America's ZERO CARBON ACTION PLAN

Sustainable Materials Management in America's Zero-Carbon Action Plan

November 17, 2020

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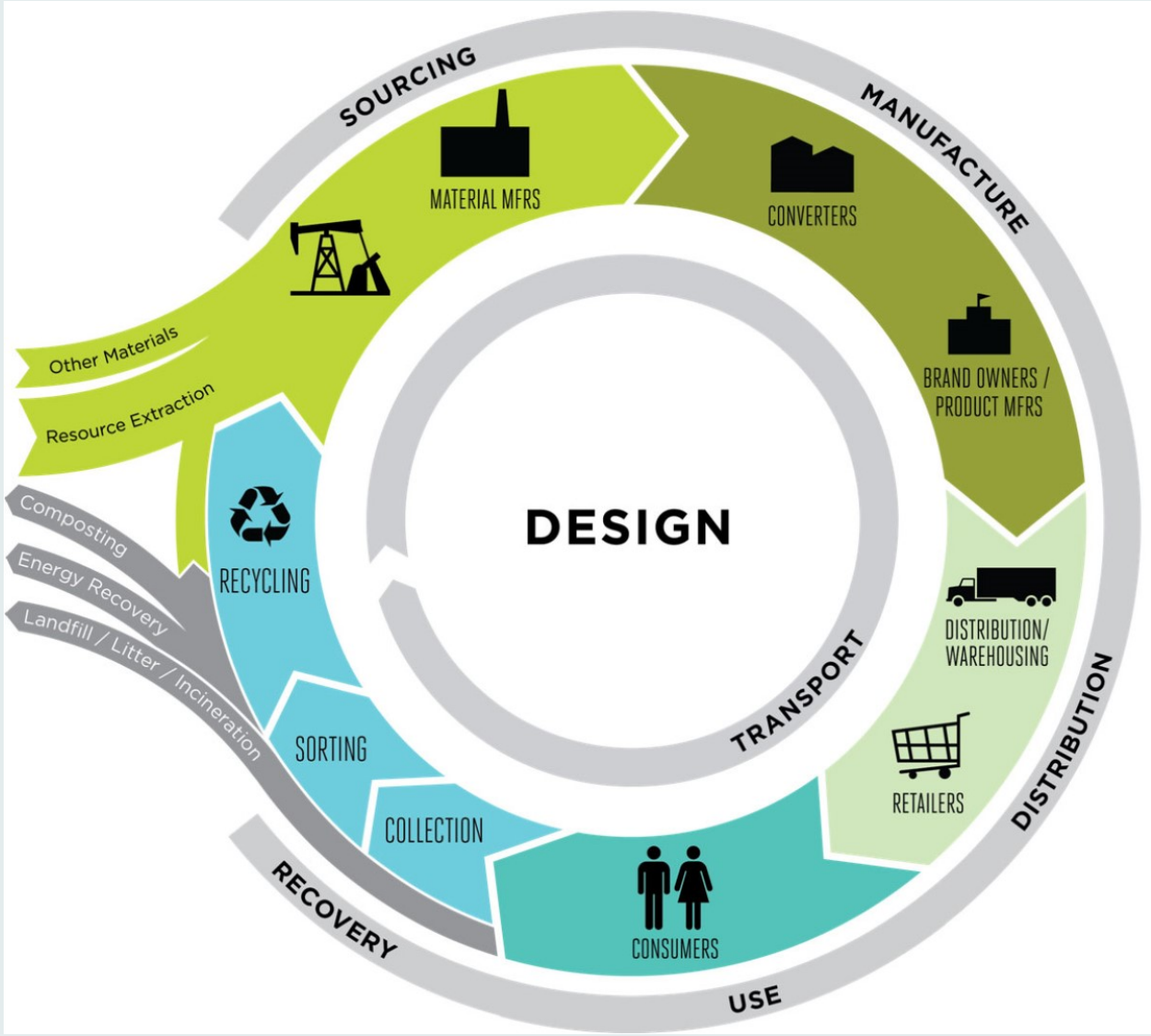
Sustainable Materials Management (SMM)



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Some Materials Management Challenges

- Implementation of product stewardship and extended producer responsibility initiatives
- Fragmentation, distributed policy authority, and outdated federal policy
- Disassociation and distraction
- An unlevel playing field
- Difficult materials

Table 5.6.1: Estimated GHG Reductions for Implementation of Some Aggressive SMM Strategies[31]

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Potential GHG Reduction Scenarios: Increased Source Reduction, Reuse, and Recycling*

Source Reduction	Reduce packaging use by:	50% 25%	40-105 $MMtCO_2e$/yr. 20-50 $MMtCO_2e$/yr.
	Reduce use of non-packaging paper products by:	50% 25%	20-70 $MMtCO_2e$/yr. 10-35 $MMtCO_2e$/yr.
Reuse/Recycling	Increase recycling of construction and demolition debris to:	100% 50% 25%	150 $MMtCO_2e$/yr. 75 $MMtCO_2e$/yr. 40 $MMtCO_2e$/yr.
	Increase national MSW	100%	300 $MMtCO_2e$/yr.
	recycling and composting rate from 2006 rate (32.5%) to:	50%	70-80 $MMtCO_2e$/yr.
	Increase composting of food scraps from 2006 rate (2%) to:	100% 50%	20 $MMtCO_2e$/yr. 10 $MMtCO_2e$/yr.
		25%	5 $MMtCO_2e$/yr.

*EPA, 2009

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Potential Benefits: 5% Increased Recovery of Aluminum, Glass, and HDPE/PET Containers*

- Decreased GHG emissions ($MtCO_2e$) per each 5% increase: 960,484.38
- Decreased energy use (million BTU) per each 5% increase: 19,667,046.76
- Increased wages per each 5% increase: $628,544,091.98
- Increased taxes per each 5% increase: $100,078,654.82
- Increased employment (labor hours) per each 5% increase: 279,70213.27

*Per EPA's WARM tool calculations, July 2020

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Some Recommended Actions

- A national beverage container deposit act
- Material bans (such as single-use plastics)
- Promotion of product stewardship
- Requiring comprehensive SMM plans for large organizations
- Banning organic material from disposal facilities

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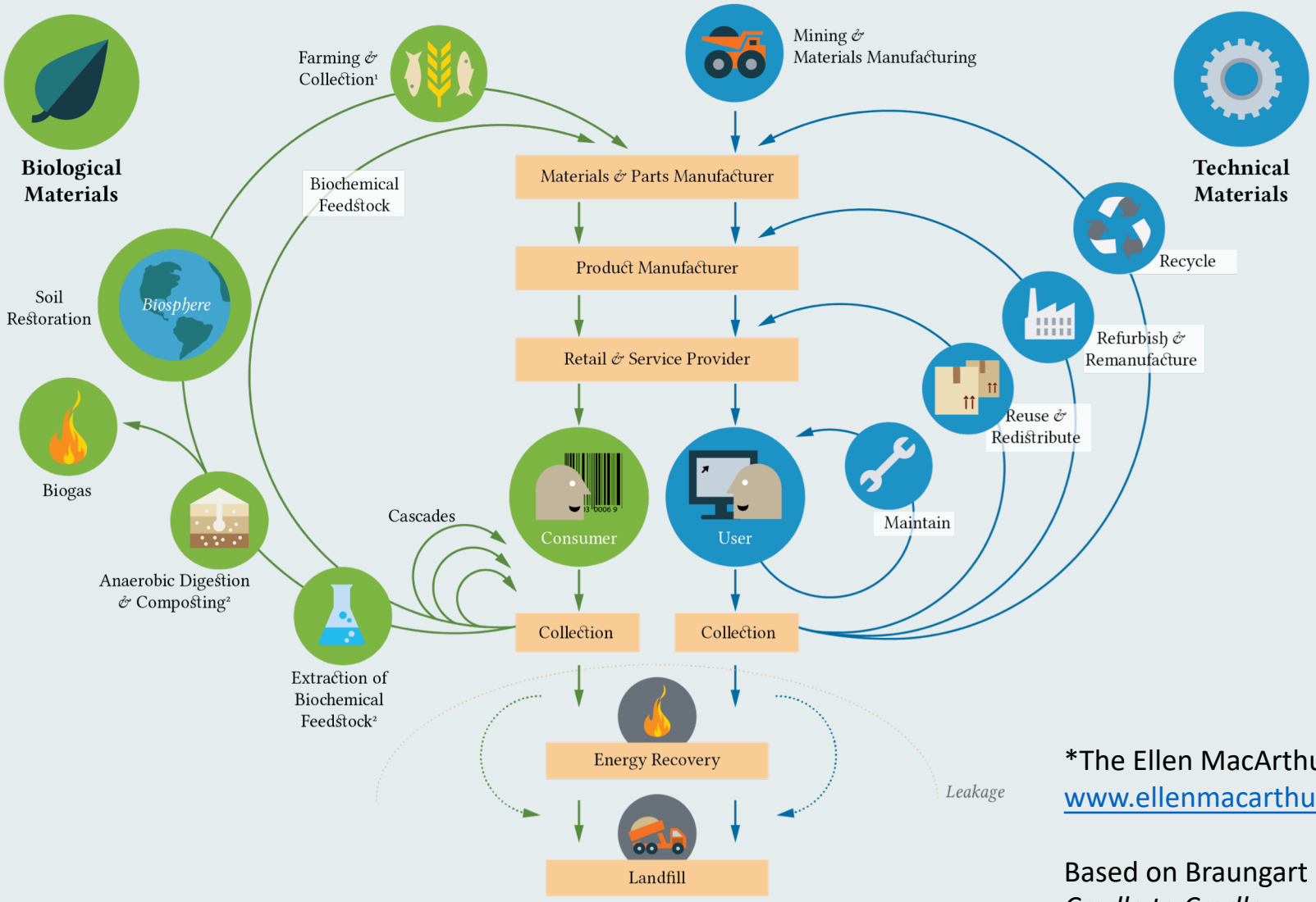
The Circular Economy*



*The Ellen MacArthur Foundation (2019), www.ellenmacarthurfoundation.org

Based on Braungart & McDonough, *Cradle to Cradle*

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Beverage Container Deposit Laws as a Model for Sustainable Materials Management

Susan V. Collins
Container Recycling Institute
November 17, 2020

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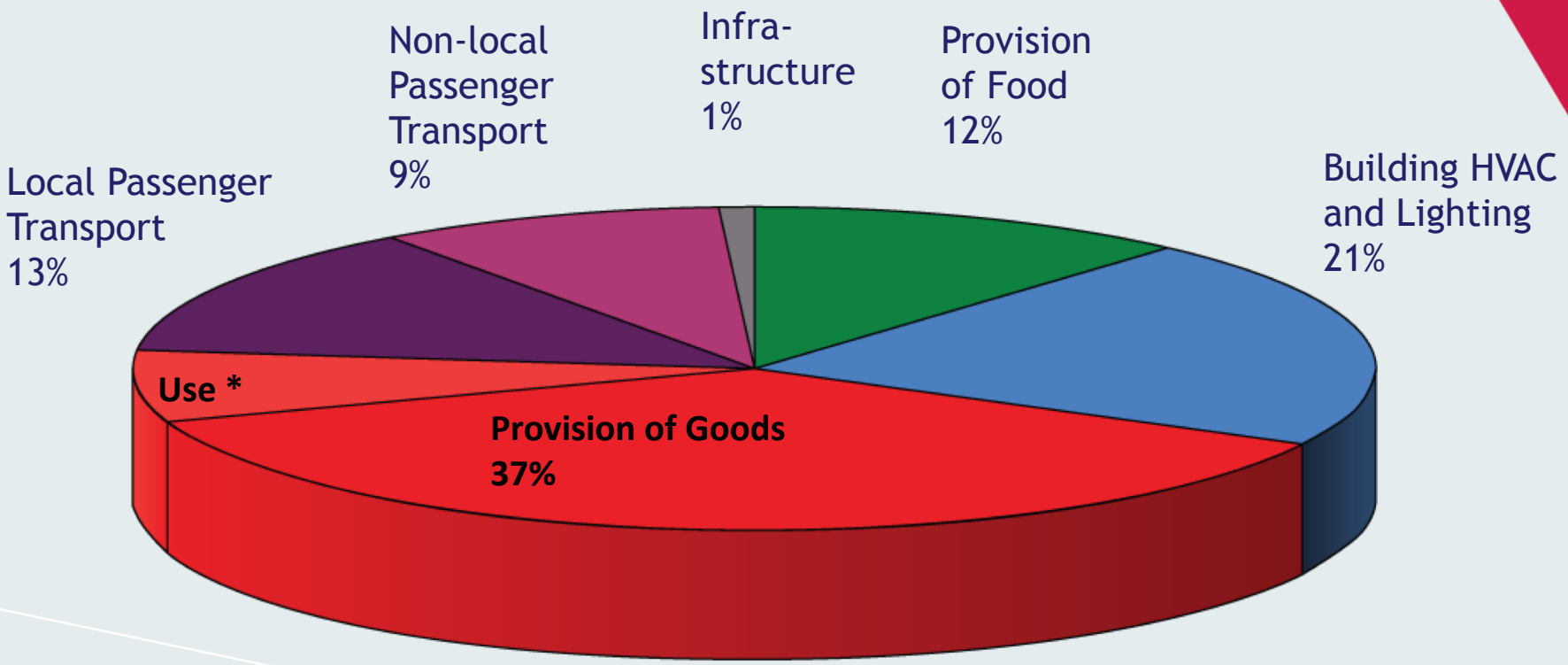
US Greenhouse Gas Emissions
Consumption View – Global



* Use of Appliances and Devices 7%

Products & Packaging 44%

Source: **PPI** 2009 – Joshuah Stolaroff

Product Policy Institute

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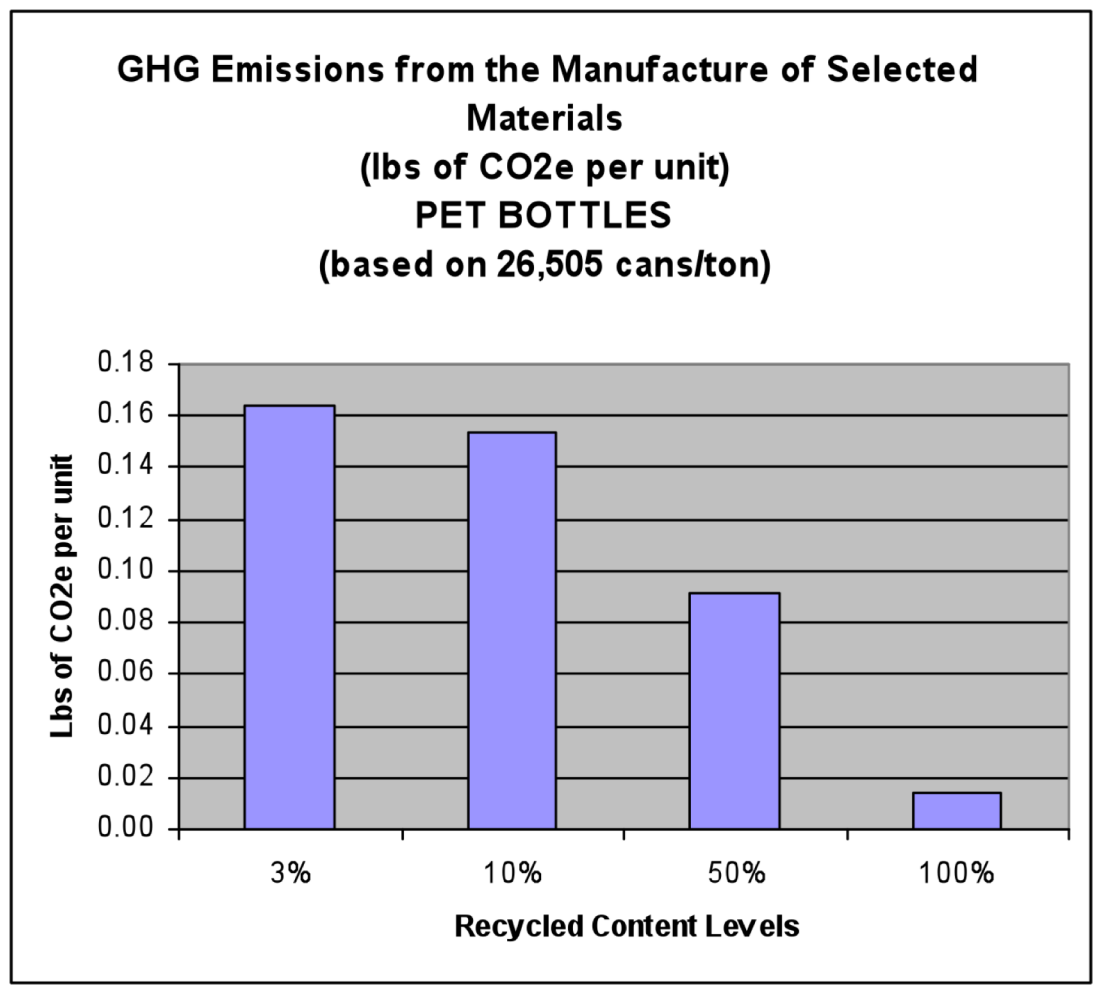
Recycled Content for PET Bottles: 3%, 10%, 50% and 100%



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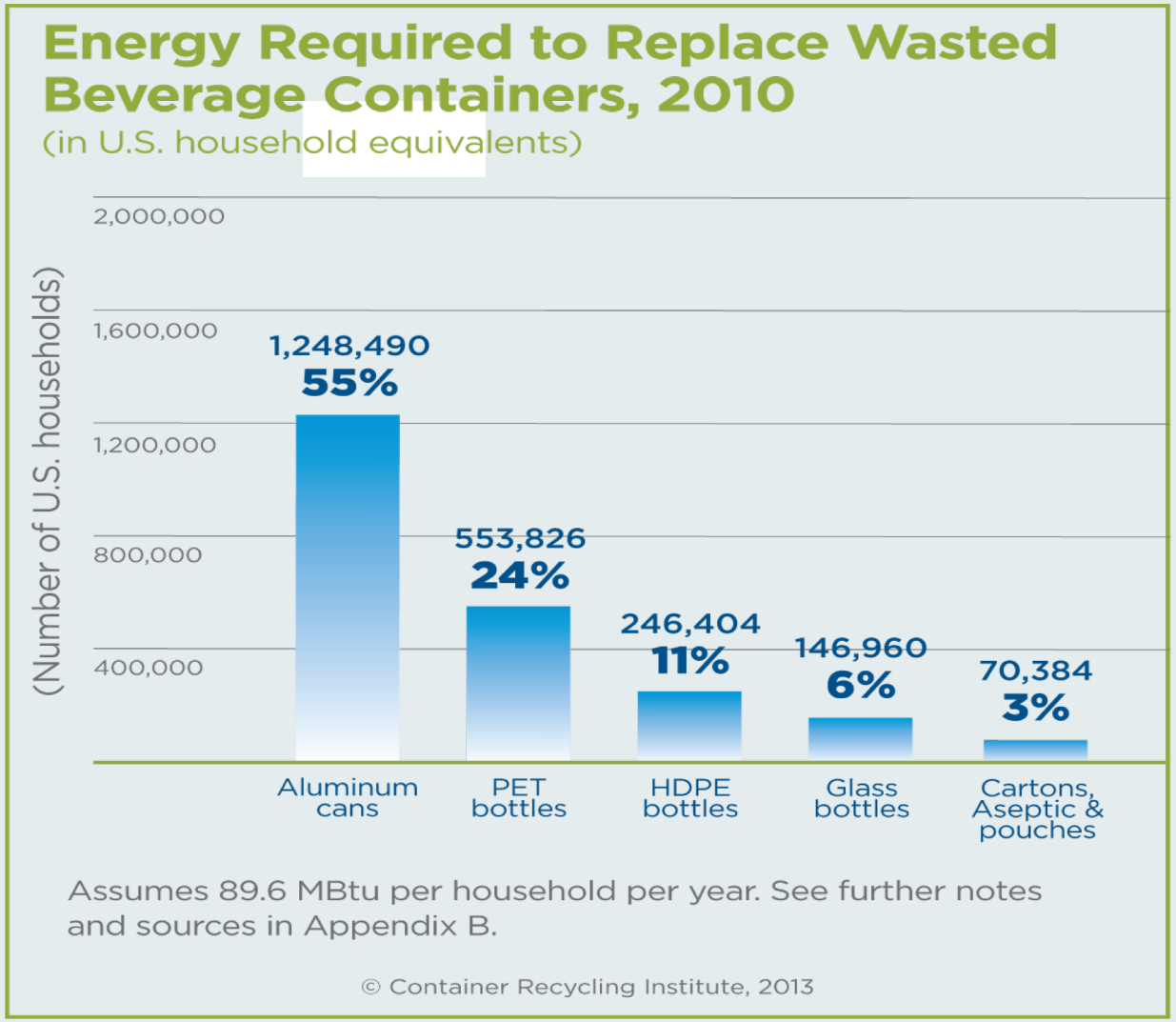
Energy Impacts of Wasting

- In total, about **2.3 million American homes** could have **all their energy needs met** (heating & cooling, cooking, utilities, etc.) with the amount of energy required to replace the beverage containers wasted in 2010.



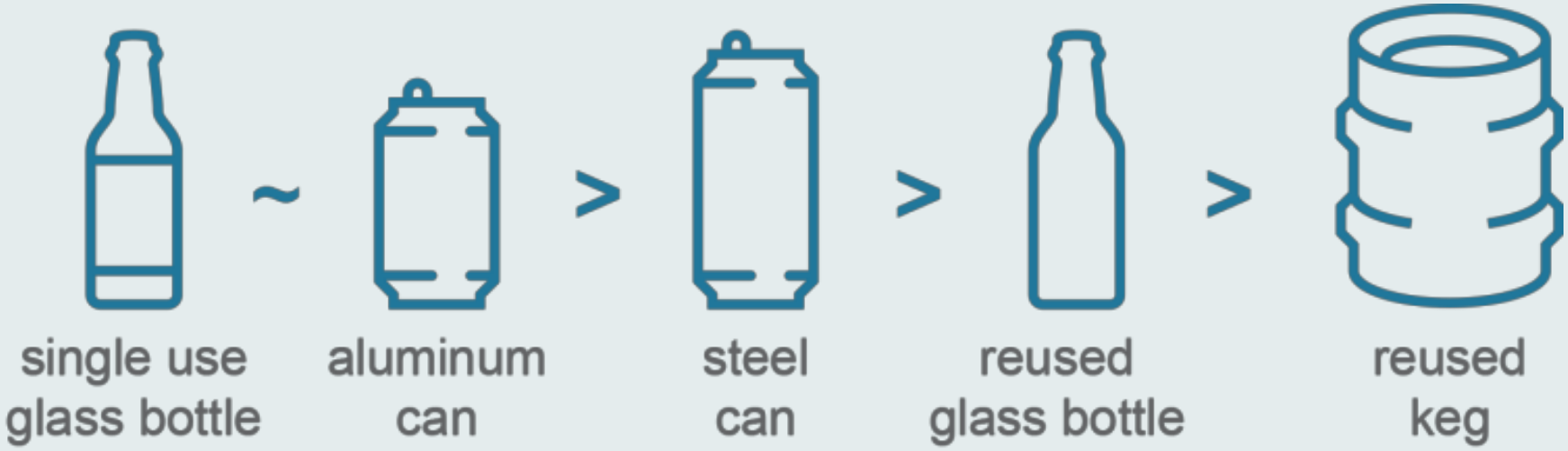


FIGURE 4. Relative environmental impact of different beer packaging.


Kokanee
Budweiser
KING OF BEERS
Miller
GENUINE DRAFT
CANADIAN
Coors LIGHT
PALE ALE
TASTER'S
CHILL
STANLEY PARK BREWERY
CANADIAN 67
1516
Corona Extra
SLEEMAN
HONEY BROWN
Rickard's TASTER'S
ALEXANDER KEITH'S
INDIA PALE ALE
PALM BAY
MINGLER
HIGH LIFE
ORIGINAL LUCKY Lager
INDÉTRÔNABLE
SPECIAL OFFER

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Container Recycling Institute © 2018

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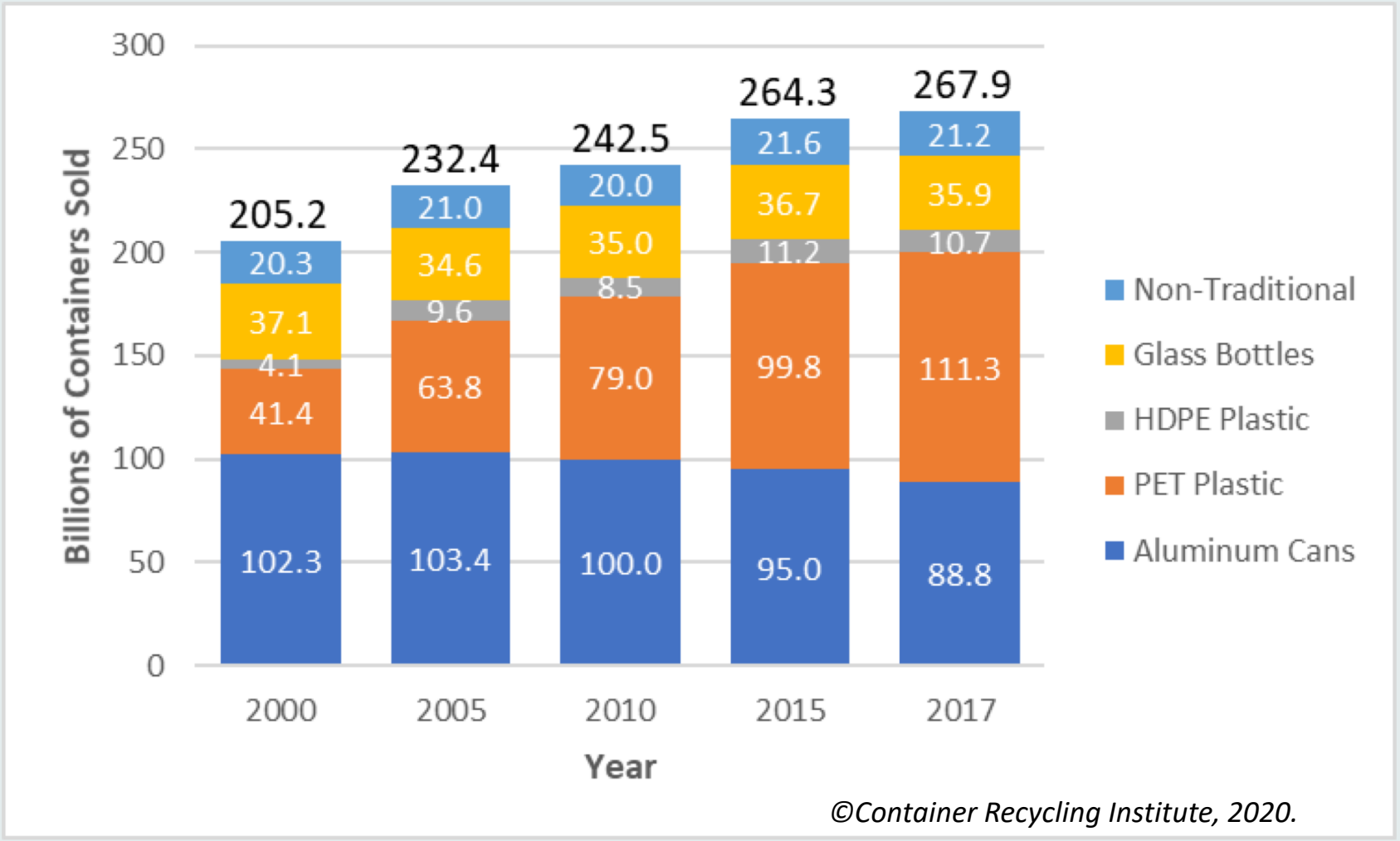
US Sales of Beverage Packaging (2000-2017)



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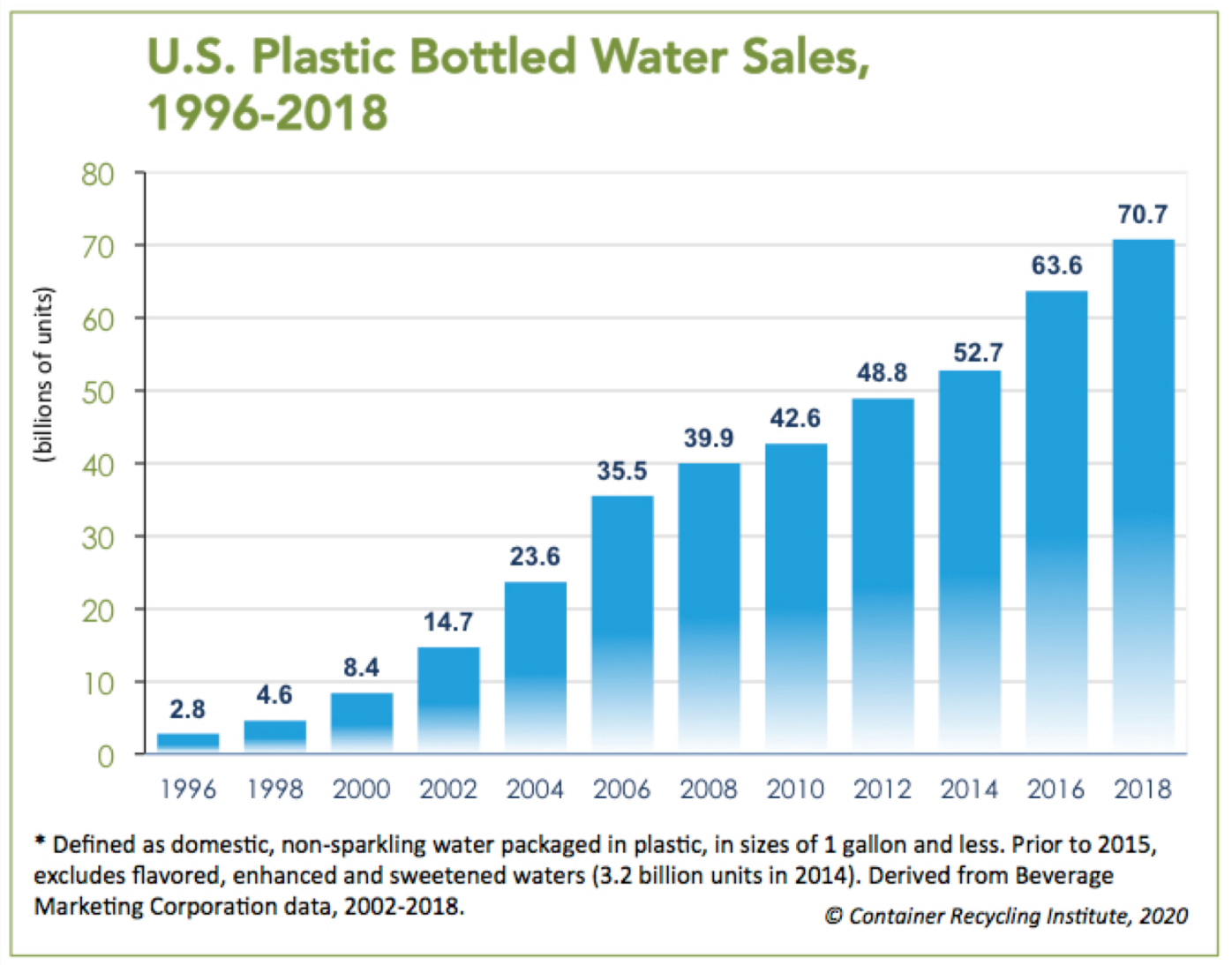
PET plastic water bottles are *the* primary source of beverage sales growth



* Defined as domestic, non-sparkling water packaged in plastic, in sizes of 1 gallon and less. Prior to 2015, excludes flavored, enhanced and sweetened waters (3.2 billion units in 2014). Derived from Beverage Marketing Corporation data, 2002-2018.

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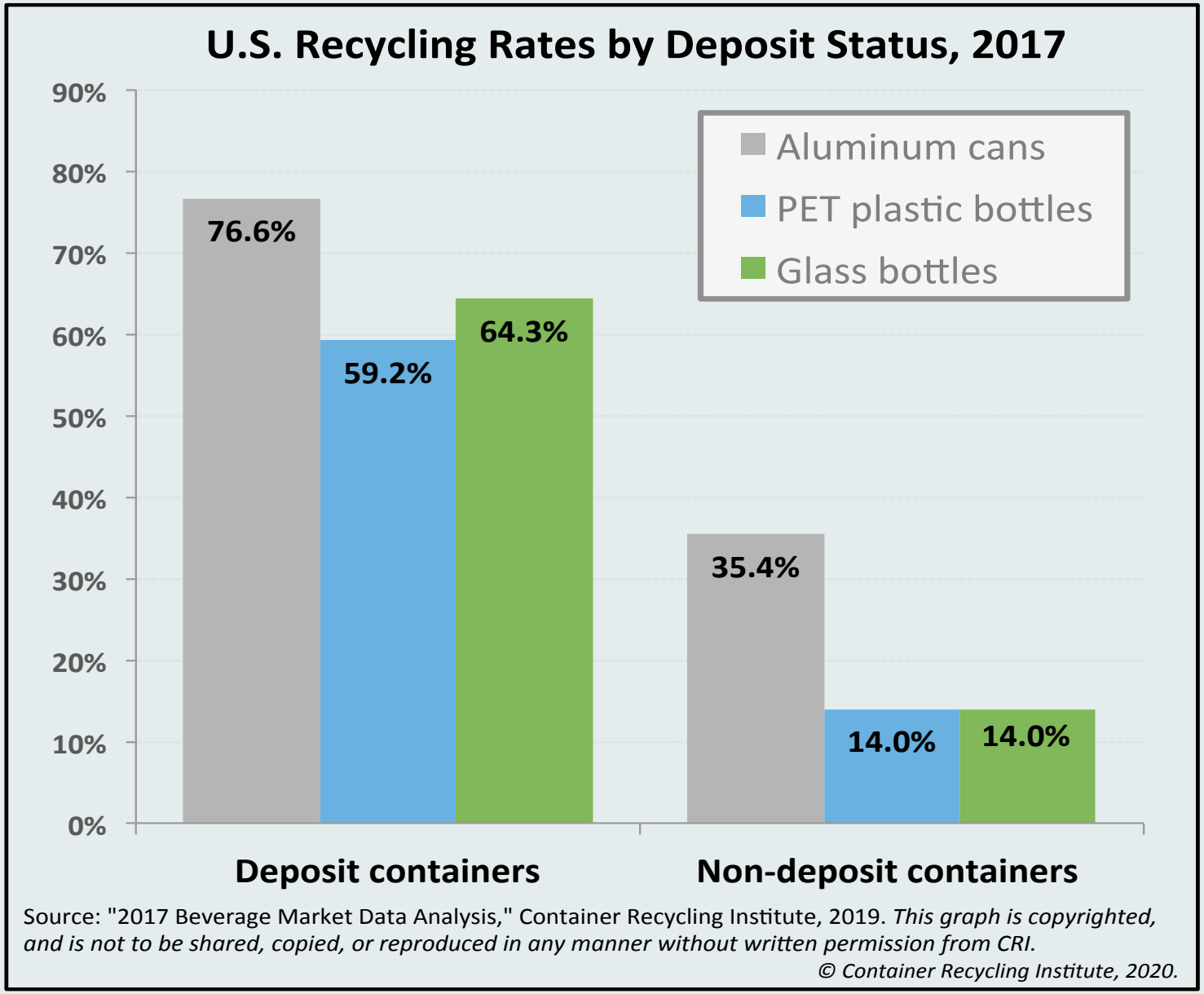

Source: "2017 Beverage Market Data Analysis," Container Recycling Institute, 2019. *This graph is copyrighted, and is not to be shared, copied, or reproduced in any manner without written permission from CRI.*

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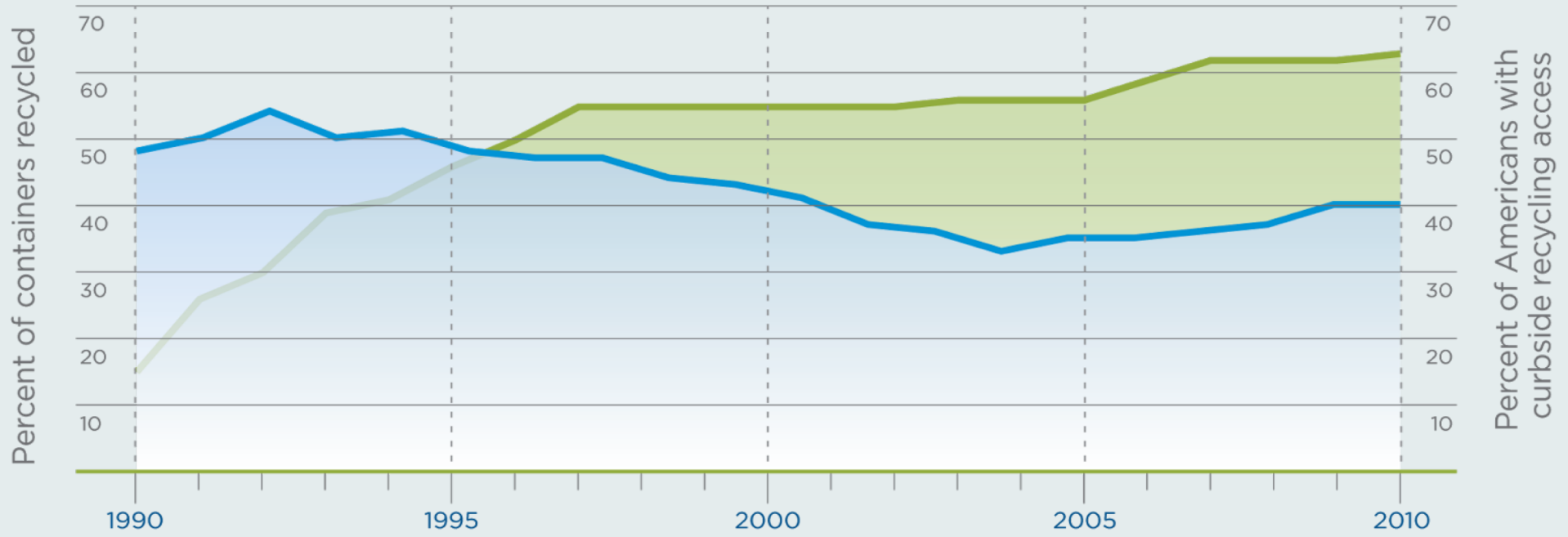
Comparing Curbside Recycling Access and Beverage Container Recycling Rates*, 1990–2010



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U.S. Deposit tons recycled vs. total beverage tons recycled, 2017

	Aluminum Cans	PET Bottles	HDPE Bottles	Glass Bottles	**Subtotal, bottles & cans**
All beverage sales	1,467,300	2,876,859	764,727	12,213,967	17,322,853
Deposit beverage sales	344,074	651,135	53,539	2,031,922	3,080,670
All beverage recycling tons	653,760	702,333	238,905	2,739,812	4,334,810
All beverage recycling rate	44.6%	24.4%	31.2%	22.4%	25.0%
Tons redeemed	263,084	389,799	19,357	1,306,969	1,979,209
Redemption rate	76.5%	59.9%	36.2%	64.3%	64.2%
Tons redeemed as a proportion of all beverage recycling tons	40.2%	55.5%	8.1%	47.7%	**45.7%**

Source: data derived from "2017 Beverage Market Data Analysis," The Container Recycling Institute, 2020.

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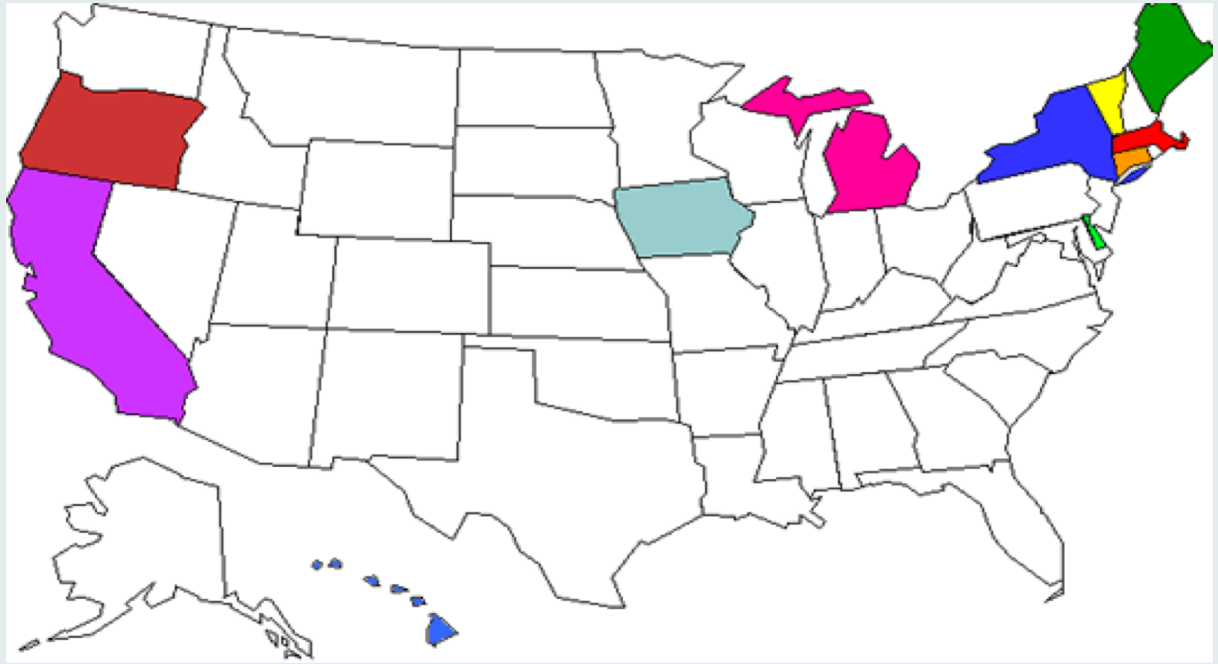
Deposits drive up the overall U.S. beverage container recycling rate

Nearly half of all beverage containers recycled in the U.S. came from the 10 bottle bill states—although they have only 28% of the US population (2018).



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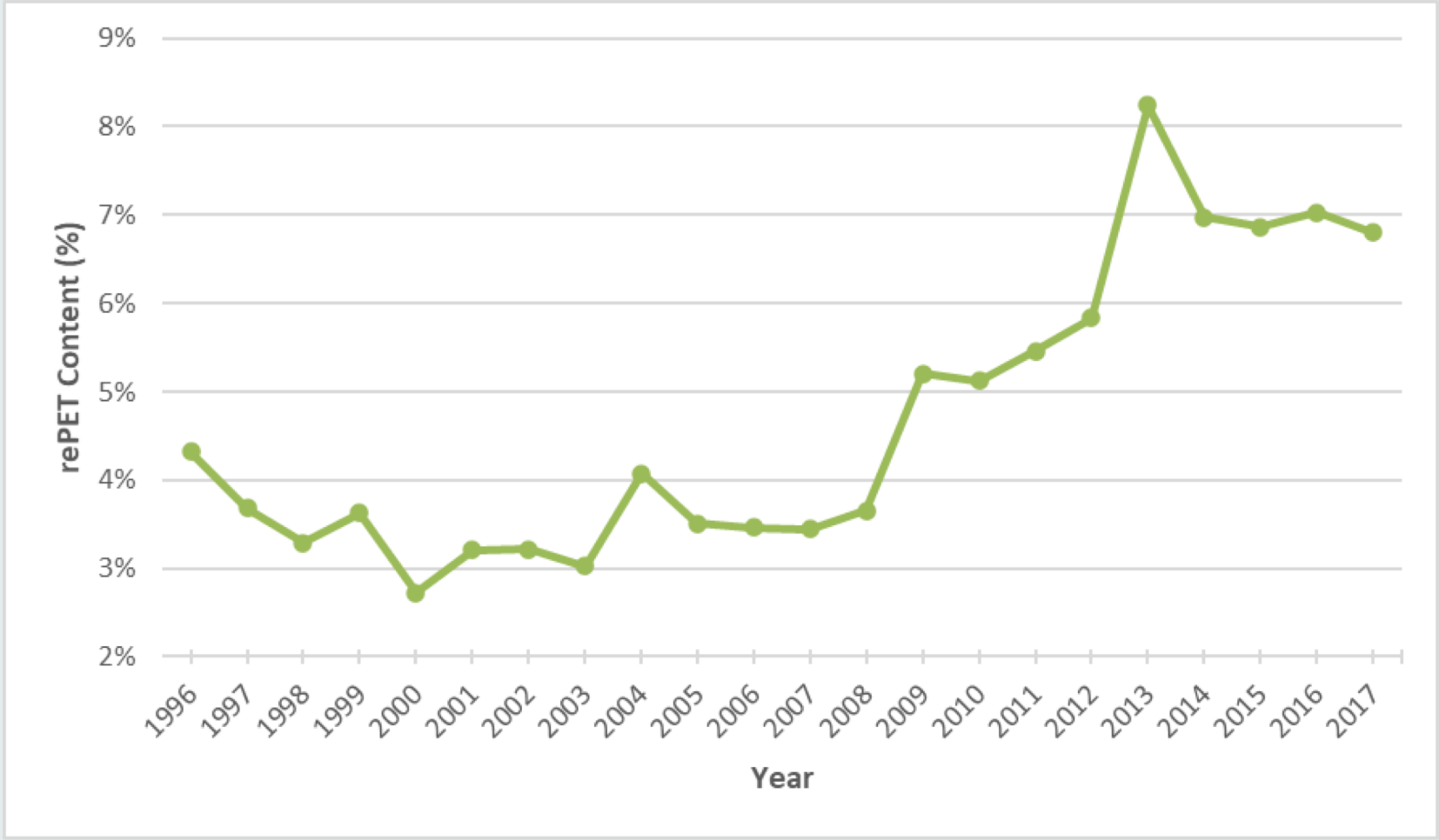
Recycled PET Content in Bottles (1996-2017)



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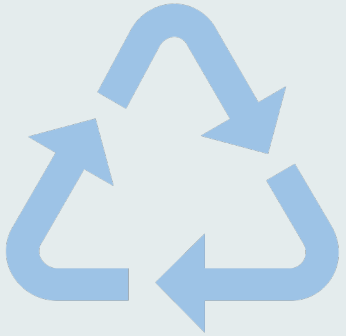
CA AB793 is now a LAW!

- First bill in US to require min. recycled content in plastic beverage bottles
  - Applies to bottles covered under CRV
- Manufacturers who miss target: penalty fee of 20¢/lb of PCR short of target
  - Some specific discretion allowed
- Reclaimers required to report weight & resin type of empty plastic CRV bottles collected and sold per year to CalRecycle
- **Governor Newsom signed on 9/24/2020**



15% min. recycled content by 2022

25% by 2025

50% by 2030

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New Container Deposit Laws Enacted for 351 Million Since 2017			
Region	**Year Passed**	**Year Implemented**	**2018 Population (millions)**
New South Wales, Australia	2016	2017	7.9
ACT - Canberra	2017	2018	0.4
Queensland	2017	2018	2.7
Maharashtra, India	2018	2018	121.4
Malta	2018	2019	0.4
Western Australia	2018	2020	2.7
Jamaica	2019	2020	2.9
Latvia	2018	2020	1.9
Slovakia	2019	2020	5.4
United Kingdom	2018	2021	66.6
Romania	2018	2022	19.6
Turkey	2018	2022	81.9
Portugal	2018	2022	10.3
Tasmania	2019	2022	0.5
New Zealand	2019	2022	4.8
Belarus	2020		9.5
Victoria, Australia	2020	2023	6.4
Singapore	2020	2022	5.9
Total			**351.2**

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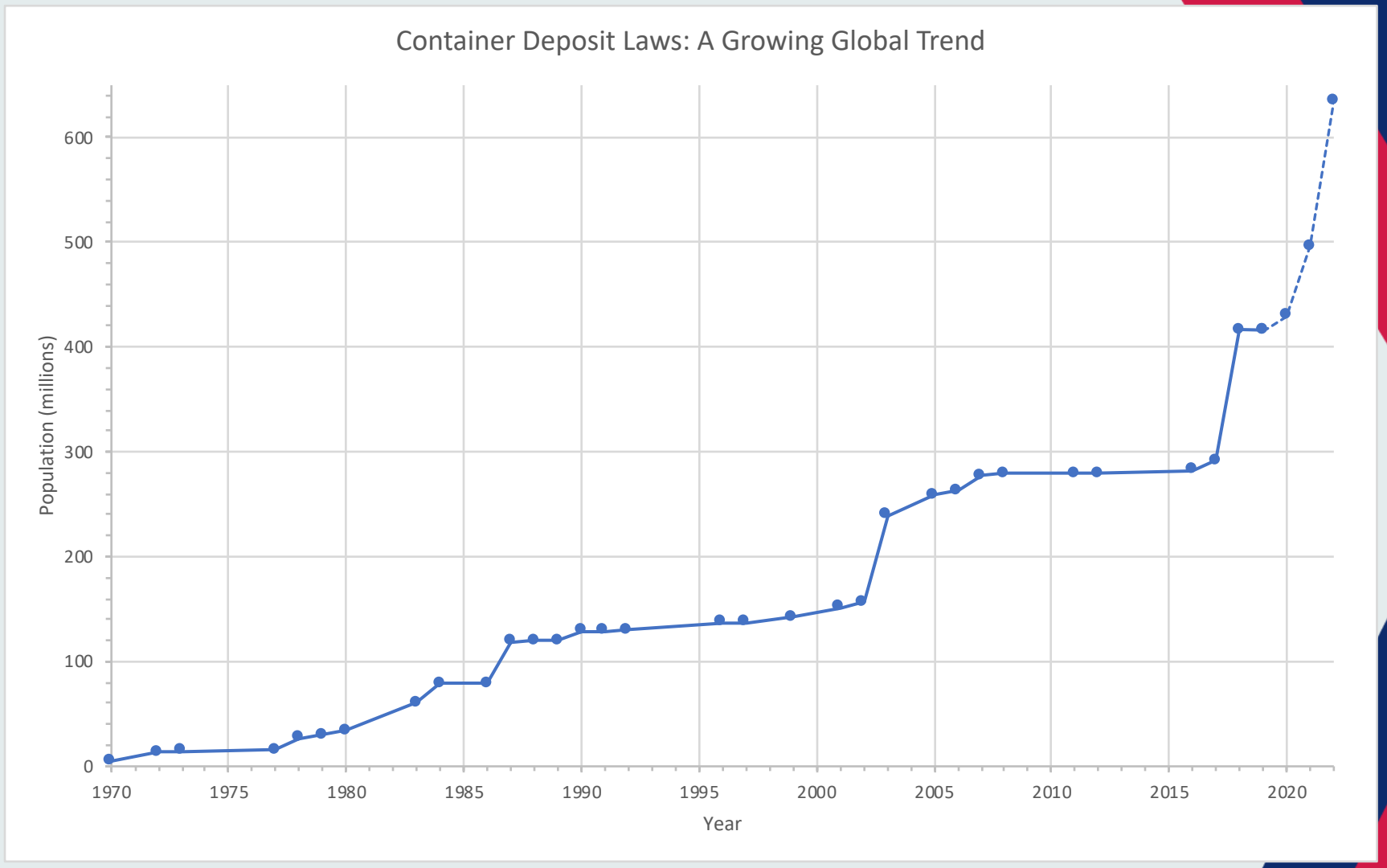
Existing and new laws will serve more than 635 million people



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Best Practices for Container Deposit Laws

Identify Best Practice Principles and Key Elements

Host One Day Conference to Showcase Best Practices (March 16, 2020)

Series of 10 Meetings to Discuss Key Elements

Creation of Guidebook

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To Get More Information

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Main website:
www.container-recycling.org
Sign up for our free weekly newsletter

Bottle Bill Website:
www.bottlebill.org

JOIN US ON facebook

www.facebook.com/container.recycling

FOLLOW US ON twitter

@CRI_recycle

LinkedIn

www.linkedin.com/company/container-recycling-institute

(310) 559-7451

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Judith Enck

President, Beyond Plastics
Visiting Professor, Bennington College
Former EPA Regional Administrator
www.beyondplastics.org
JudithEnck@Bennington.edu
@Plasticsbeyond on twitter – live tweet this talk

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The Solid Waste Hierarchy is Upside Down

1. Reduce and Reuse
2. Recycle and compost
3. Landfill and incineration

However, most of the effort and money goes in to the bottom rungs of the hierarchy: bury and burn. This is not sustainable materials management.

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Exhibit A: Plastics

We are turning our oceans into landfills.

Half of all plastics ever made were made in the past 15 years.

Huge climate change implications, i.e. ethane crackers.

There are micro plastics in our air and food and water.

Plastic recycling clocks in at an anemic 8.5%

Only recycle #1 and #2 plastics.

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We Are a Throw Away Society

The United States makes up 4.25% of the world's population

Uses 17% of the world's energy

24% of the world's natural resources

12% of the world's solid waste.

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Unfair to local governments

Local Taxpayers Get stuck:

- Cleaning up litter
- Picking up Solid Waste at homes and businesses
- Paying Tipping fees at incinerators or landfills

Yet, have little control over the ever increasing amounts of waste

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Environmental Justice Issue

- Have You Ever Seen a Landfill or Incinerator Sited in a Nice Section of a White, Affluent Community?
- They are almost always sited in low income communities and communities of color, including in rural areas.

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What Can be Done?

Massive Grassroots Effort to Reduce Plastic Pollution

The Plastic Trifecta. See BeyondPlastics.org

And

The Break Free From Plastic Pollution Act in Congress, Senate bill 3263 House bill 5845

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Nelson Mandela Said:

It is always impossible until it is done.

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Upcoming Webinars (Eastern Time)

Industry
November 18
3:00 – 4:00 pm

Food & Land-Use
November 24
3:00 – 4:00 pm