

Calendar Year 2014 Report of Beverage Container Sales, Returns, Redemption, and Recycling Rates



California Department of Resources Recycling and Recovery

May 8, 2015

S T A T E O F C A L I F O R N I A

Edmund G. Brown Jr.
Governor

Matt Rodriguez
Secretary, California Environmental Protection Agency

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

Caroll Mortensen
Director

Department of Resources Recycling and Recovery (CalRecycle)
Public Affairs Office
1001 I Street (MS 22-B)
P.O. Box 4025
Sacramento, CA 95812-4025
www.calrecycle.ca.gov/Publications/
1-800-RECYCLE (California only) or (916) 341-6300
Publication # DRRR 2015-1526



To conserve resources and reduce waste, CalRecycle reports are produced in electronic format only. If printing copies of this document, please consider use of recycled paper containing 100 percent postconsumer fiber and, where possible, please print on both sides of the paper.

Copyright © 2015 by the California Department of Resources Recycling and Recovery (CalRecycle). All rights reserved. This publication, or parts thereof, may not be reproduced in any form without permission.

This report was prepared by staff of the Department of Resources Recycling and Recovery (CalRecycle) to provide information or technical assistance. The state makes no warranty, expressed or implied, and assumes no liability for the information contained in the succeeding text. Any mention of commercial products or processes shall not be construed as an endorsement of such products or processes.

The California Department of Resources Recycling and Recovery (CalRecycle) does not discriminate on the basis of disability in access to its programs. CalRecycle publications are available in accessible formats upon request by calling the Public Affairs Office at (916) 341-6300. Persons with hearing impairments can reach CalRecycle through the California Relay Service at 1-800-735-2929.

Table of Contents

Executive Summary	1
Introduction and Other Main Sections	2
Background of the California Beverage Container Recycling Program	2
How Information Is Gathered.....	3
Recycling and Redemption Rates Analysis.....	3
Comparative Analysis of Beverage Container Sales and Returns, Postfilled Returns, and Recycling and Redemption Rates.....	4
The Rise of CRV to Increase Recycling of Containers	6
Market Share Changes and Their Impact on the “All Materials” Recycling Rate	7
Impact of Adding Plastics #3–#7 to the Beverage Container Recycling Program.....	9
Departmental Actions to Increase/Improve Recycling.....	9
Environmental Benefits from Recycling Beverage Containers.....	10
Source Reference Notes	13
.....	

Executive Summary

The Department of Resources Recycling and Recovery (CalRecycle) announces calendar year 2014 recycling and redemption rates for California Redemption Value (CRV) beverage containers. Public Resources Code Section 14551(a) requires CalRecycle to publish the recycling and redemption rates biannually. The recycling rate is the number of CRV beverage containers redeemed divided by the number of CRV beverage containers sold. The redemption rate is the recycling rate with the addition of food and beverage containers not currently included in the program but which have been recycled, and refillable beverage containers. The overall calendar year 2014 recycling rate is 80 percent and the redemption rate is 84 percent, which equates to more than 17.7 billion CRV beverage containers recycled by Californians.

As of November 1, 2013, changes in law sponsored by CalRecycle requires that recycling centers pay consumers for loads of material inspected and confirmed as containing only CRV beverage containers. In addition, as of January 2014, CalRecycle promulgated new regulations lowering consumer load limits and requiring detailed reporting by persons importing beverage containers into California.

These regulations enhance CalRecycle's anti-fraud enforcement efforts and appear to have impacted the recycling rate by decreasing it. This is the first significant decline seen in the recycling rate since January 2000, when plastics #2-#7 were added to the recycling program.

California remains the nation's leader in total quantity of bottles and cans recycled.

The improved economics of recycling and increased public awareness of the Beverage Container Recycling Program are contributing factors that continue to deliver positive benefits to California's environment. Products manufactured from recycled feedstock often require less energy than those produced from virgin resources, and lower energy consumption results in fewer greenhouse gas emissions, which are a significant contributor to climate change.

Each year Californians consume more than 253.8 million barrels of oil^{1 2} in the residential sector and emit 146.37 million metric tons of carbon dioxide in greenhouse gases through residential use and passenger cars.³ The annual impact of recycling 17.7 billion beverage containers saved the equivalent of 5.1 million barrels of oil and reduced the equivalent of 1.7 million metric tons of carbon dioxide in greenhouse gas emissions, which equates to eliminating the energy consumption of more than 263,000 households for one year.⁴

Introduction and Other Main Sections

Background of the California Beverage Container Recycling Program

California's Beverage Container Recycling Program is unique among states that have a beverage container return system. In most other bottle deposit states, the cans and bottles are returned to the store from which they were purchased. Californians enjoy a more convenient form of container recovery with more than 2,300 certified recycling centers and hundreds of curbside recycling programs statewide.

CalRecycle's Division of Recycling administers the program. Enacted by the 1986 California Beverage Container Recycling and Litter Reduction Act (AB 2020, Margolin, Chapter 1290, Statutes of 1986), the program seeks to make beverage container recycling integral to California's economy. The program's primary goal is to achieve and maintain high recycling rates for each beverage container type covered in the program, thereby reducing beverage container litter in the state.

The program is funded through redemption payments made to CalRecycle by beverage distributors on each eligible beverage container sold in the state. Redemption payment revenues are deposited into the California Beverage Container Recycling Fund. The distributor collects CRV from the retailer when the distributor sells the beverage container to the retailer. Consumers pay CRV to the retailer, and consumers receive CRV payments from the fund when they return empty beverage containers to certified recycling centers.

The program involves recycling centers, beverage manufacturers and distributors, retail dealers, local conservation corps, and other participants to ensure Californians have convenient opportunities to recycle their beverage containers. The Division of Recycling is responsible for participant certification and registration, regulatory compliance, and technical and educational assistance to industries and groups involved in beverage container recycling.

Beverage containers currently covered by the program include those filled with:

- Carbonated mineral and soda water and other similar carbonated soft drinks
- Non-carbonated soft drinks
- Wine coolers and distilled spirit coolers
- Beer and malt beverages
- Non-carbonated water including non-carbonated mineral water
- Sport drinks
- Coffee and tea drinks
- Vegetable juice in containers 16 ounces or less
- Carbonated and non-carbonated fruit drinks that contain any percentage of fruit juice
- 100 percent fruit juices that are packaged in containers less than 46 ounces

In 2014, more than 22.1 billion CRV beverage containers were sold in California, of which 17.7 billion were returned for recycling, making the overall recycling rate 80 percent for that year.

How Information Is Gathered

CalRecycle gathers beverage container sales and returns information directly from program participants. This information is subject to audit and is considered reliable in depicting accurate recycling rates.

Recycling centers provide beverage container returns information to CalRecycle. As consumers return empty beverage containers through the various recycling systems, recycling centers receive CRV reimbursements in addition to other program funds as specified by statute. The claims for payment by recycling centers provide data on the quantities of beverage container materials actually received. Recycling centers report data by weight and material type, and CalRecycle staff convert the data to container counts.

Sales information is gathered from distributors when they pay the redemption payment of five cents for each beverage container under 24 fluid ounces and 10 cents for each beverage container of 24 fluid ounces or greater.

In calculating recycling rates for each material type, CalRecycle divides the volume of beverage containers returned by the volume of beverage containers sold. The calculation is performed bi-annually. The first calculation is performed for the period January through June, and the second calculation is performed for the period July through December. Combining the sales and returns calculations from the two periods provides the calendar year recycling rate.

Recycling and Redemption Rates Analysis

The recycling rate is CRV containers recycled divided by the number of containers sold. The redemption rate includes CRV containers and non-CRV containers, but only if the non-CRV container number is 5 percent greater than the CRV container number. This number is then divided by the number of containers sold. In the original legislation, the redemption rate was used as a basis for automatic increases to the CRV. The redemption rate is still mandated but is no longer used, as CRV increases have occurred through subsequent legislation.

The “All Materials” calendar year 2014 recycling rate is 80 percent, and the redemption rate is 84 percent. During calendar year 2014, returns of CRV beverage containers decreased 3 percent overall, while sales showed an increase of 4 percent.

In addition, more than 1.6 billion empty postfilled food and drink containers were returned for recycling. Postfilled food and drink containers are containers not currently covered under the program.

Factors that may influence recycling and redemption rates are:

- Economy – consumers are more/less likely to redeem beverage containers for CRV
- Continued consumer education and convenience
- Continued growth in curbside and collection programs
- Increased awareness and commitment for a greener environment

Chart 1 and Table 1 provide the recycling rates by material type for calendar year 2014.

Chart 1 – Calendar Year 2014 Recycling Rates by Material Type

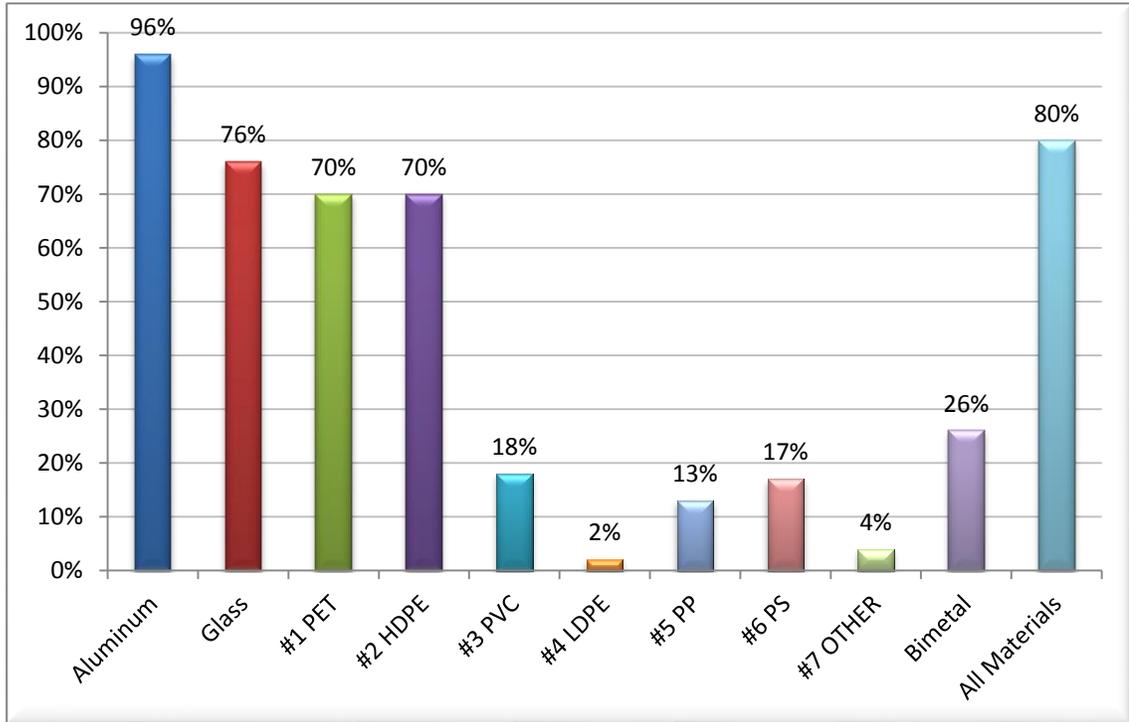


Table 1 – Calendar Year 2014 Recycling Rates by Material Type

Material	Recycling Rate
Aluminum	96%
Glass	76%
#1 PET	70%
#2 HDPE	70%
#3 PVC	18%
#4 LDPE	2%
#5 PP	13%
#6 PS	17%
#7 OTHER	4%
Bimetal	26%
All Materials	80%

Comparative Analysis of Beverage Container Sales and Returns, Postfilled Returns, and Recycling and Redemption Rates

Changes in beverage container sales and returns, postfilled returns, and recycling and redemption rates between 2013 and 2014 are shown in Table 2. Table 2 includes aluminum, glass, #1 PET plastic, and #2 HDPE plastic only, since these material types have moderate to high volumes, making a year-to-year percentage change more meaningful.

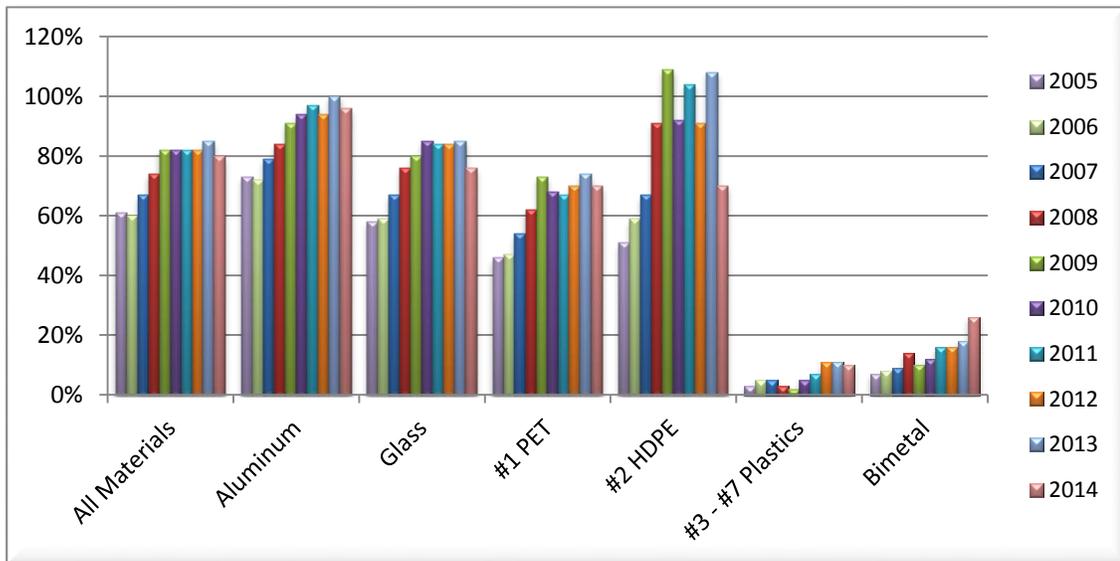
Plastic resins #3–#7 and bimetal are not listed because they are based on very low volumes of sales and returns. Relatively small changes in the number of containers redeemed can result in a large percentage change that may be misleading. For example, a single manufacturer changing from one material type to another can have significant impacts on the percent change.

Table 2 – Changes in Beverage Container Sales and Returns, Postfilled Returns, and Recycling and Redemption Rates from 2013 to 2014

Material Type	% Change Sales	% Change CRV Returns	% Change Postfilled Returns	Change in Redemption Rate Points	Change in Recycling Rate Points
Aluminum	-1%	-5%	-22%	-4	-4
Glass	3%	-7%	16%	-7	-9
#1 PET	8%	3%	18%	-4	-4
#2 HDPE	-7%	-40%	-5%	-34	-38

To illustrate long-term trends in the recycling rate, Chart 2 shows recycling rates for calendar years 2005 through 2014 for all material types. Chart 2 indicates a positive trend with increasing recycling rates from 2005 to 2009.

Chart 2 – Comparison of Recycling Rates Calendar Years 2005–2014 All Material Types



The Rise of CRV to Increase Recycling of Containers

California first began collecting redemption payments from beverage distributors and disbursing CRV to consumers in late 1987. The initial redemption payment and refund value was established at 1 cent per container. In 1989, the program increased the redemption payment to 2 cents for every beverage container sold, while the CRV was 2 cents for a single beverage container and 5 cents for every two beverage containers (SB 1221, Hart, Chapter 1339, Statutes of 1989).

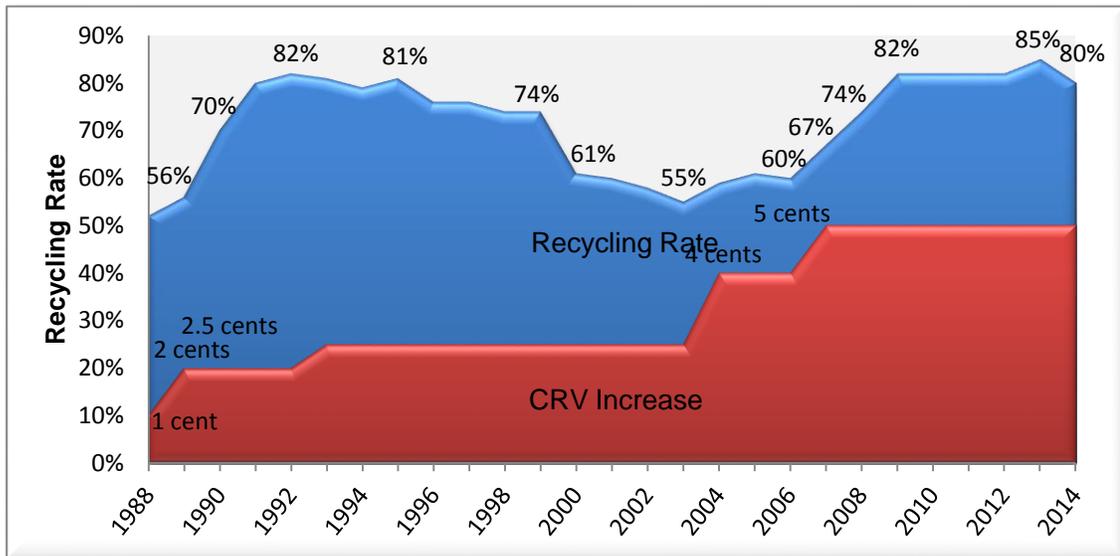
In 1989, the “All Materials” recycling rate was 56 percent. The recycling rate increased over the next three years, resulting in an “All Materials” recycling rate of 82 percent in 1992 when the refund value increased to 2½ cents per container under 24 ounces and 5 cents per container 24 ounces or greater. However, as sales increased more rapidly than returns, the “All Materials” recycling rate declined from 82 percent in 1992 to a low of 55 percent in 2003.

Effective Jan. 1, 2004, the refund value was increased to 4 cents per container under 24 ounces and 8 cents per container 24 ounces or greater (AB 28, Jackson, Chapter 753, Statutes of 2003). The recycling rate for “All Materials” increased by four percentage points to 59 percent in 2004 and by an additional two percentage points to reach 61 percent in 2005.

With the enactment of AB 3056 (Assembly, Natural Resources Committee, Chapter 907, Statutes of 2006), effective January 1, 2007, the refund value paid to consumers increased to 5 cents for beverage containers less than 24 ounces, and 10 cents for containers 24 ounces or greater, while the redemption value paid by distributors remained 4 and 8 cents, respectively, for the period of January 1, 2007, to June 30, 2007. On July 1, 2007, the redemption value paid by distributors increased to 5 and 10 cents.

Chart 3 depicts the relationship between the CRV paid and the recycling rate over time. In general, within two or three years of each CRV increase, the recycling rate increased and then peaked. Chart 3 shows the “All Materials” recycling rate from the beginning of the program through 2011. As shown in Chart 3, there has been a significant increase in the years since the CRV increased on January 1, 2007.

Chart 3 – CRV Increase vs. Recycling Rate



The sharp decreases in recycling rates during calendar years 2000 and 2001 were due primarily to a change in the total sales resulting from the passage of SB 332 (Sher, Chapter 815, Statutes of 1999) and SB 1906 (Sher, Chapter 731, Statutes of 2000). These two pieces of legislation added new beverages and beverage container types, primarily new plastic resins, to the program. These actions created a notable rise in the sales of beverage containers, specifically PET, subject to CRV. Returns lagged behind sales as a result, causing a notable decline in the recycling rates.

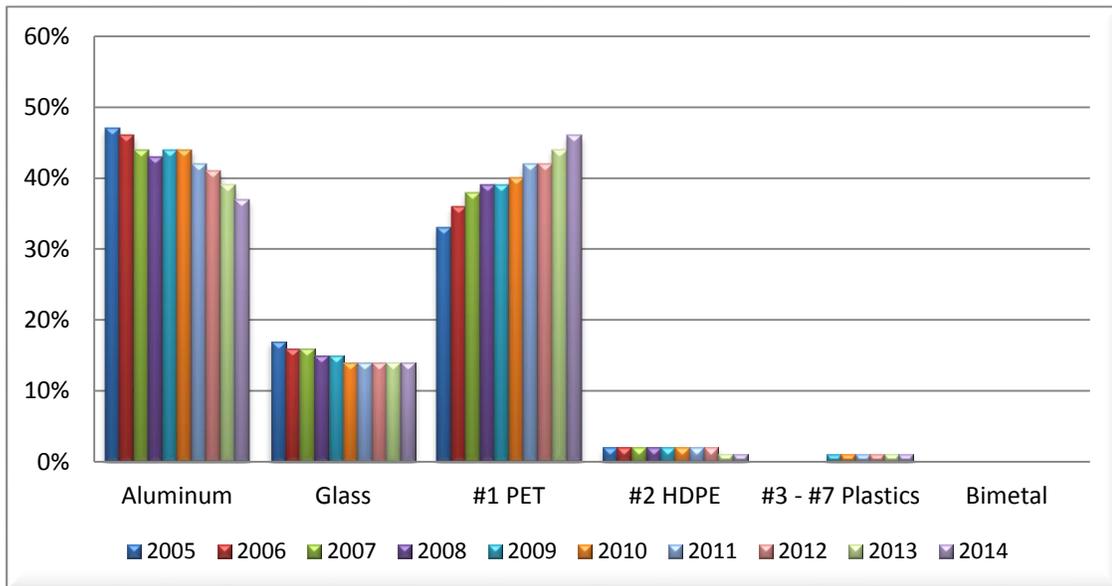
Market Share Changes and Their Impact on the “All Materials” Recycling Rate

Traditionally, aluminum had always had the largest market share per sales volume compared to other material types. The “All Materials” recycling rate generally followed the same trend as aluminum. However, since the inclusion of new beverages and container types into the program in 2000, there has been a decrease in the aluminum market share and an increase in the market share of #1 PET plastic.

A contributing factor to the decline in shares of aluminum beverage container sales may be a growing preference for the use of plastic containers by the beverage container industry as well as by consumers. In addition, convenience stores offer refrigerated, single-serve soft drinks and bottled non-carbonated water in resealable plastic containers. This is not prevalent with aluminum or glass container types. As a result, aluminum and glass market shares of beverage container sales and returns have been on a slow decline since the year 2000, while at the same time, #1 PET plastic’s market share continues to increase. The market share for returns indicate the same trends as seen in the market share for sales.

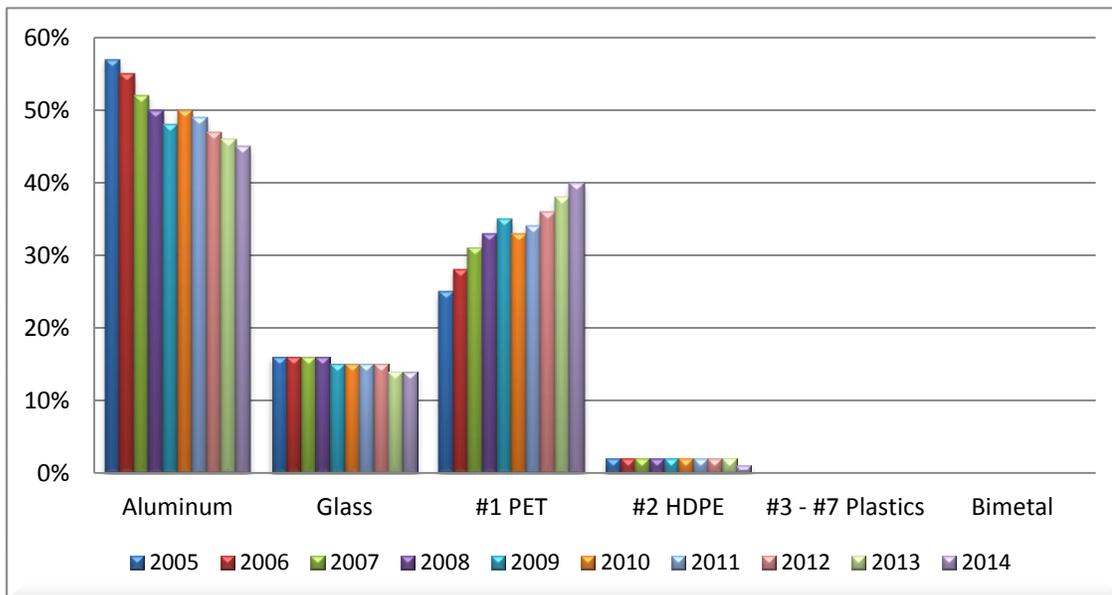
Chart 4 illustrates the transition of beverage container sales market shares from aluminum and glass to #1 PET plastic based on market changes.

Chart 4 – Market Share of Beverage Container Sales Calendar Years 2005–2014



Charts 4 and 5 illustrate the very limited market shares of #2 HDPE, plastic resins #3–#7, and bimetal. Chart 5 illustrates the decrease in market shares of returns for glass and aluminum and an increase in the market shares of returns for #1 PET plastic.

Chart 5 – Market Share of Beverage Container Returns Calendar Years 2005–2014



Impact of Adding Plastics #3–#7 to the Beverage Container Recycling Program

In January 2000, when new beverages were added to the program, changes to the California Beverage Container Recycling and Litter Reduction Act also brought new container types, specifically plastics #2 HDPE, #3 PVC, #4 LDPE, #5 PP, #6 PS, and #7 Other.

The plastics #3–#7 resin containers had not been commonly collected previously and had limited established markets. They have been sold in limited volumes with a combined beverage container sales market share of less than 1 percent. Even if 100 percent of the #3–#7 resin plastic beverage containers had been redeemed, the “All Materials” recycling rate would not have changed by more than 1 percent. While their low recycling rates are not causing any significant reductions in the “All Materials” recycling rate, CalRecycle continues to work to raise awareness of the recyclability of these containers and to establish markets for them.

A primary tenet of the beverage container recycling law is to ensure that every container material type proves its own recyclability. To support this goal, it includes the processing payment and processing fee components. When the cost of recycling is greater than the scrap value of a beverage container material type, the beverage manufacturer using that packaging material type must pay a processing fee to offset the recyclers’ expenses. Recyclers receive processing payments as reimbursement for their expenses. For containers that may not be economical to recycle, this mechanism makes producers of beverage containers responsible for a portion of the costs of recycling. If the cost of the processing fee exceeds the benefit of the container used, it may encourage manufacturers to use containers that can be recycled more economically.

Departmental Actions to Increase/Improve Recycling

- Quality incentive payments – \$10 million: To improve the quality of glass material going to processors. The material must be cleaned and color-sorted and must originate from a curbside, community service program, or drop-off or collection program.
- Plastic Market Development Payment Program – \$10 million: To improve the quality of plastic material from a processor to an end user manufacturer producing a product in California. The processor must wash and create flakes, pellets, or another form of plastic material.
- Curbside supplemental payments – \$15 million: Payments to curbside programs to expend on recycling efforts.
- Payments to cities and counties – \$10.5 million: Payments for beverage container recycling and litter cleanup activities.
- Local community conservation corps grants – \$17.7 million: Payments to certified community conservation corps that are designated by a city or county to perform litter abatement or recycling activities.

- Since 2006, CalRecycle has provided more than 100,000 Recycling Starter Kits to help offices, exercise clubs, schools, and other businesses start beverage container collection programs. The kits include a recycling bin and technical assistance to start and maintain the program. Orders may be placed for the kits [online](#).
- CalRecycle promotes its toll-free information hotline (1-800-RECYCLE) and its consumer-friendly [CalRecycle website](#). These sources of recycling information are used extensively and updated regularly to provide consumers and program participants with the latest information on program changes. To help develop a consistent statewide message, CalRecycle provides public access to marketing resources, which can be ordered by telephone at 1-800-RECYCLE or [online](#).

Environmental Benefits from Recycling Beverage Containers

To determine the amount of greenhouse gas emission reductions achieved through recycling, CalRecycle uses the U.S. Environmental Protection Agency Waste Reduction Model (WARM) to calculate the total greenhouse gas emissions in metric tons of carbon equivalents. The U.S. EPA model was created to help solid waste planners and organizations track and calculate greenhouse gas emission reductions. The model totals the greenhouse gas emissions of the baseline and of alternative waste management practices—recycling, source reductions, landfilling, and more.

By recycling 80 percent of aluminum, glass, #1 PET, and #2 HDPE beverage containers, Californians saved resources and reduced greenhouse gas emissions equivalent to:

- 458,000 metric tons of carbon equivalents
- 5.1 million barrels of oil
- Annual energy consumption of 263,000 households⁵

Chart 6 shows the reduction of greenhouse gas emissions by primary material type (aluminum, glass, #1 PET, and #2 HDPE beverage containers).

Chart 6 – Greenhouse Gas Emission Reductions Based on 80 Percent of Beverage Containers Recycled

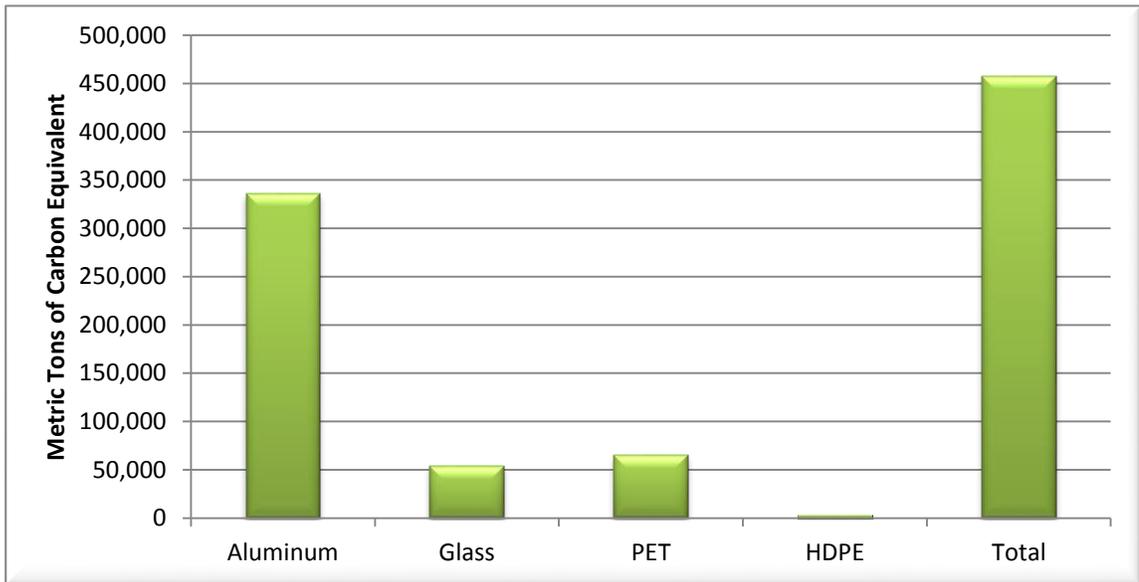
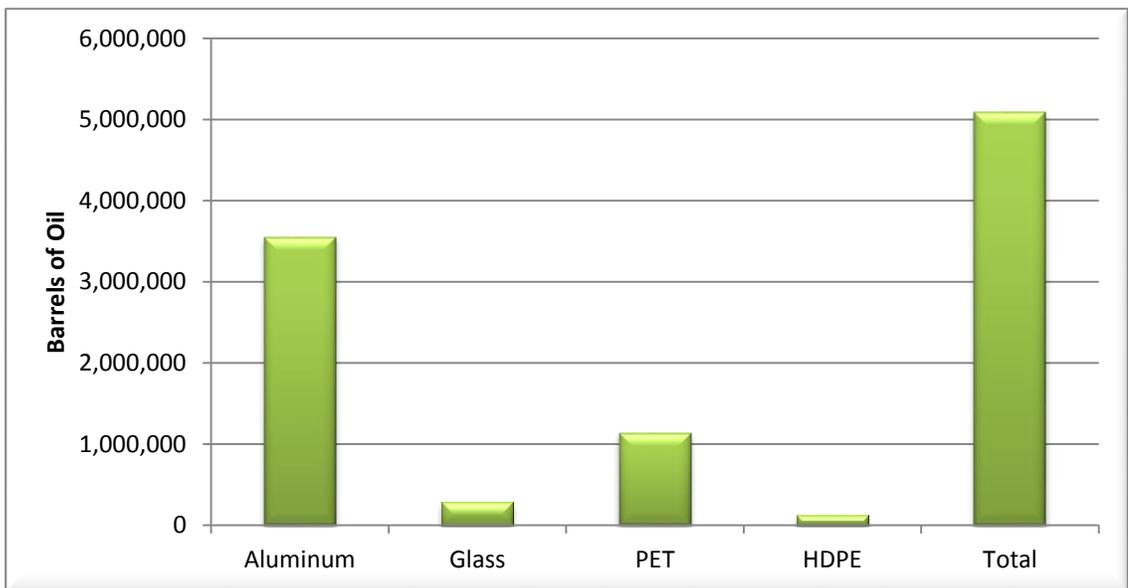


Chart 7 shows the energy savings in barrels of oil by material. As shown in the chart, the energy impacts vary by each material type, but recycling results in significant energy savings for all of the top four materials.

Chart 7 – Energy Savings Based on 80 Percent of Beverage Containers Recycled



The annual energy consumption in the residential sector in California is 253.8 million barrels of oil.^{6 7} The total energy savings based on the 2014 volume of aluminum, glass, #1 PET, and #2 HDPE container materials returned for recycling in California, as compared to the material being landfilled, is 5.1 million barrels of oil, or 2 percent of the total annual energy consumed by California residences.

Energy savings associated with recycling various materials are driven largely by the difference between manufacturing the material using virgin feedstocks and manufacturing the material using recycled feedstocks. The energy factors presented demonstrate that conscientious recycling and waste management can lead to substantial energy savings and greenhouse gas emission reductions.

Source Reference Notes

¹ U.S. Energy Information Administration Database, retrieved from

<http://www.eia.gov/state/data.cfm?sid=CA#Consumption>

² Based on conversion of 1 barrel of oil = 5.8 million BTU

³ California Environmental Protection Agency, Air Resources Board, retrieved from

http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf

⁴ Based on Waste Reduction Model (WARM) developed by the U.S. Environmental Protection Agency, retrieved from http://epa.gov/epawaste/conserves/tools/warm/Warm_Form.html

⁵ *ibid*

⁶ U.S. Energy Information Administration, retrieved from

<http://www.eia.gov/state/data.cfm?sid=CA#Consumption>

⁷ Based on conversion of 1 barrel of oil = 5.8 million BTU

Biannual Report of Beverage Container Sales, Returns, Redemption & Recycling Rates

ALUMINUM	REDEMPTION	RECYCLING	SALES *	RECYCLED	REFILLABLE	POSTFILLED
July - Dec 2014	93	93	4,474,633,933	4,157,165,609	0	131,399,522
Jan - June 2014	100	100	3,792,519,524	3,807,624,029	0	84,893,360
July - Dec 2013	94	94	4,572,541,991	4,312,450,344	0	80,671,385
Jan - June 2013	107	107	3,773,877,522	4,029,683,749	0	196,212,685
GLASS						
July - Dec 2014	85	72	1,724,218,760	1,235,895,477	495	285,375,338
Jan - June 2014	97	82	1,423,887,672	1,165,039,597	36,025	272,169,765
July - Dec 2013	89	78	1,663,521,877	1,296,138,166	0	246,123,345
Jan - June 2013	107	94	1,378,455,784	1,298,376,254	456	234,795,131
#1 PET						
July - Dec 2014	69	69	5,797,262,133	4,008,380,681	0	148,971,715
Jan - June 2014	72	72	4,429,974,469	3,186,740,167	0	135,284,137
July - Dec 2013	67	67	5,391,378,510	3,638,558,693	0	121,200,384
Jan - June 2013	82	82	4,072,129,282	3,328,640,754	0	119,590,020
#2 HDPE						
July - Dec 2014	267	69	139,064,716	95,355,409	0	281,044,091
Jan - June 2014	280	71	133,073,810	94,907,746	0	282,009,182
July - Dec 2013	305	100	148,518,428	148,556,782	0	311,218,567
Jan - June 2013	309	116	143,200,116	166,506,177	0	284,318,541
#3 PVC						
July - Dec 2014	18	17	16,047	2,750	0	197
Jan - June 2014	22	22	4,828	1,080	0	8
July - Dec 2013	9	9	39,234	3,687	0	45
Jan - June 2013	26	25	15,536	3,888	0	422
#4 LDPE						
July - Dec 2014	4	2	10,765,345	174,075	0	288,201
Jan - June 2014	1	1	10,544,567	145,860	0	18,119
July - Dec 2013	2	1	15,962,304	204,060	0	145,746
Jan - June 2013	2	2	11,162,106	180,398	0	21,914
#5 PP						
July - Dec 2014	10	8	1,054,141	86,295	0	19,506
Jan - June 2014	29	25	418,606	104,067	0	23,360
July - Dec 2013	12	11	481,390	53,031	0	8,343
Jan - June 2013	9	8	350,083	26,821	0	6,057
#6 PS						
July - Dec 2014	18	18	57,309,538	10,321,761	0	597,643
Jan - June 2014	16	16	51,482,734	8,110,436	0	570,115
July - Dec 2013	18	18	53,686,684	9,797,275	0	452,573
Jan - June 2013	20	20	41,164,716	8,325,898	0	511,207
#7 OTHER						
July - Dec 2014	3	3	51,050,791	1,573,935	0	159,188
Jan - June 2014	5	5	22,997,921	1,061,276	0	131,343
July - Dec 2013	6	5	31,888,478	1,659,014	0	181,279
Jan - June 2013	6	5	25,502,942	1,400,205	0	191,833
BIMETAL						
July - Dec 2014	37	35	17,267,485	6,059,041	0	600,995
Jan - June 2014	17	16	16,096,149	2,517,078	0	356,205
July - Dec 2013	19	18	18,495,314	3,379,869	0	304,262
Jan - June 2013	20	18	14,386,709	2,581,843	0	440,783
ALL MATERIALS						
July - Dec 2014	81	78	12,272,642,889	9,515,015,033	495	848,456,396
Jan - June 2014	87	84	9,881,000,280	8,266,251,336	36,025	775,455,594
July - Dec 2013	82	79	11,896,514,210	9,410,800,921	0	760,305,929
Jan - June 2013	98	93	9,460,244,796	8,835,725,987	456	836,088,593

CALCULATION OF REDEMPTION AND RECYCLING RATES

A = number of empty beverage containers returned

B = refillables returned

C = postfilled food or drink packaging containers returned

D = number of beverage containers sold

$$\text{Redemption Rate} = \frac{A + B + [C - (0.05 \times (A + B))]}{D}$$

(The value in brackets [] is included only when greater than zero.)

$$\text{Recycling Rate} = \frac{(A+B)}{D}$$

CONTAINER PER POUND RATES (CRV / POSTFILLED)	ALUMINUM	GLASS	#1 PET	#2 HDPE	#3 PVC	#4 LDPE
July - Dec 2014 (RCs Only)	29.6 / 23.4	1.88 / 1.0	18.8 / 7.1	7.2 / 5.5	10.4 / NA	41.6 / NA
CONTAINER PER POUND RATES (CRV / POSTFILLED)	#5 PP	#6 PS	#7 OTHER	BIMETAL		
July - Dec 2014 (RCs Only)	8.4 / NA	114.2 / NA	3.1 / NA	7.1 / NA		

FOOTNOTE:

* Because of the delay between the time a container is distributed for sale and the time it is returned for recycling, the Department has determined the average "Return Time" as two months.

The sales shown reflect this two month lag period.

* Beginning 2003, all recycling and redemption rates are presented as whole numbers

CALENDAR YEAR REDEMPTION AND RECYCLING RATES

HISTORICAL

ALUMINUM	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	96	96	8,267,153,457	7,964,789,638	0	216,292,882
2013	100	100	8,346,419,513	8,342,134,093	0	276,884,070
2012	94	94	8,638,801,146	8,123,249,346	0	208,967,732
2011	97	97	8,528,534,391	8,297,656,638	0	131,255,848
2010	94	94	8,830,503,071	8,262,251,598	0	183,283,911
2009	91	91	9,200,376,864	8,354,269,499	0	145,503,506
2008	84	84	9,539,853,194	8,004,343,689	0	44,421,762
2007	79	79	9,613,050,224	7,616,879,727	0	88,490,455
2006	72	72	10,018,815,900	7,217,550,376	0	10,495,163
2005	73	73	9,649,079,960	7,073,940,741	0	16,864,583
2004	76	75	9,764,193,509	7,361,715,276	0	3,312,941
2003	67	70	9,595,275,797	6,682,353,680	0	58,635,725
2002	74	74	9,420,894,816	6,971,154,448	0	85,989,348
2001	75	75	9,426,681,445	7,036,772,391	0	75,404,003
2000	76*	76*	9,521,709,518	7,086,969,721	0	73,859,460
1999	80	80	9,189,990,393	7,348,438,576	0	155,372,430
1998	80	80	9,273,717,898	7,381,508,007	0	178,559,988
1997	80	80	9,192,062,677	7,391,944,684	0	206,552,057
1996	80	80	9,046,339,201	7,257,109,422	0	157,451,082
1995	84	84	8,996,915,732	7,565,437,626	0	293,381,456
1994	82	82	9,640,060,625	7,859,363,654	0	150,118,131
1993	84	84	9,473,124,532	7,926,540,025	0	214,496,528
1992	85	85	9,849,092,574	8,378,479,015	0	204,306,718
1991	85	85	9,735,460,863	8,235,715,915	0	170,214,314
1990	76	76	9,859,752,871	7,478,135,392	0	153,794,134
1989	64	64	9,231,958,871	5,940,283,700	0	49,407,050
1988	62	61	8,829,125,615	5,416,522,775	0	358,327,175
GLASS	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	90	76	3,148,106,432	2,400,935,074	36,520	557,545,103
2013	97	85	3,041,977,661	2,594,514,420	456	480,918,476
2012	96	84	2,995,935,708	2,519,706,355	558	468,025,919
2011	96	84	2,900,759,697	2,439,782,363	808	455,012,720
2010	95	85	2,925,441,274	2,482,262,726	618	420,232,943
2009	91	80	3,131,130,270	2,519,321,210	1,697	440,461,371
2008	84	76	3,339,106,477	2,523,961,411	7,525	391,349,224
2007	75	67	3,489,108,046	2,330,774,614	9,638	389,179,670
2006	66	59	3,608,513,760	2,112,947,786	2,821	370,369,583
2005	65	58	3,466,533,078	2,013,762,725	2,130	353,661,624
2004	63	56	3,479,268,354	1,955,998,098	128,867	342,089,880
2003	58	51	3,389,513,062	1,723,047,987	364,085	314,717,017
2002	59	52	3,426,758,463	1,788,856,334	380,457	314,008,206
2001	62	54	3,469,509,699	1,868,554,693	378,452	362,368,007
2000	60*	54*	3,342,291,557	1,828,493,003	4,193,806	315,211,767
1999	71	60	2,699,056,360	1,563,428,698	56,547,053	381,756,617
1998	75	63	2,547,082,395	1,533,478,471	78,152,008	379,486,791
1997	79	67	2,488,007,100	1,575,406,811	90,836,718	383,973,447
1996	82	69	2,432,063,268	1,574,020,543	102,421,509	400,541,247
1995	86	74	2,477,905,727	1,731,621,270	111,828,496	376,815,597
1994	84	73	2,554,889,789	1,735,423,078	125,310,440	384,421,672
1993	86	75	2,524,975,195	1,753,023,220	147,140,942	369,469,526
1992	95	72	2,638,669,944	1,718,900,206	168,996,240	718,914,546
1991	85	71	2,837,961,367	1,802,801,890	198,954,148	508,723,118
1990	60	57	3,252,914,365	1,644,555,614	215,792,631	183,272,912
1989	45	40	3,136,247,664	945,069,624	304,045,641	216,179,258
1988	44	35	3,165,716,125	664,948,766	441,803,396	324,349,294

#1 PET	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	70	70	10,227,236,602	7,195,120,848	0	284,255,852
2013	74	74	9,463,507,792	6,967,199,447	0	240,790,404
2012	70	70	8,987,380,757	6,261,353,441	0	226,008,864
2011	67	67	8,506,386,719	5,691,492,496	0	184,324,414
2010	68	68	8,047,937,685	5,479,307,708	0	176,256,081
2009	73	73	8,181,154,963	6,005,759,655	0	158,405,528
2008	62	62	8,603,054,451	5,322,655,475	0	146,233,004
2007	54	54	8,318,703,619	4,526,823,914	0	137,690,275
2006	47	47	7,798,923,048	3,644,524,984	0	141,107,582
2005	46	46	6,858,895,480	3,124,591,752	0	130,597,359
2004	39	39	6,415,159,040	2,512,392,756	0	121,121,275
2003	36	35	5,553,858,516	1,947,144,218	0	125,886,380
2002	36	36	4,732,756,528	1,687,585,835	0	106,089,707
2001	37	36	4,032,761,142	1,435,601,027	0	112,531,165
2000	34*	34*	3,239,139,000	1,181,701,068	0	73,332,339
1999	79	65	1,278,411,247	829,974,260	0	223,909,692
1998	69	57	1,284,678,834	731,421,805	0	193,778,325
1997	69	58	1,206,774,464	698,322,157	0	168,565,032
1996	69	59	1,028,068,545	607,521,858	0	127,904,829
1995	74	64	760,783,391	488,882,966	0	99,011,197
1994	80	71	605,667,834	429,468,272	0	77,573,604
1993	76	70	577,329,580	403,344,084	0	58,323,616
1992	75	68	549,907,144	371,540,845	0	58,814,794
1991	58	56	530,597,819	299,758,173	0	20,829,383
1990	31	31	558,856,452	171,828,692	0	8,298,647
1989	7	7	556,680,692	37,863,612	0	1,221,987
1988	5	4	560,093,605	24,327,749	0	2,971,618
#2 HDPE	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	273	70	272,138,526	190,263,155	0	563,053,273
2013	307	108	291,718,544	315,062,959	0	595,537,108
2012	223	91	361,328,577	330,556,020	0	491,647,800
2011	264	104	313,253,833	325,908,263	0	516,331,345
2010	235	92	328,475,429	302,278,255	0	483,678,996
2009	239	109	333,773,107	363,460,377	0	452,634,864
2008	210	91	340,429,976	311,121,660	0	420,195,579
2007	172	67	380,601,853	256,710,868	0	411,767,176
2006	168	59	368,095,875	217,278,376	0	412,468,760
2005	149	51	390,610,134	199,446,347	0	393,714,308
2004	131	47	425,894,436	198,752,419	0	370,342,710
2003	97	34	525,379,842	176,430,068	0	342,980,733
2002	118	42	427,072,126	181,466,591	0	331,509,039
2001	110	39	457,575,262	177,141,048	0	336,565,235
2000	98*	22*	385,191,241	93,243,804	0	345,788,475
#3 PVC	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	18	18	20,875	3,830	0	205
2013	14	14	54,770	7,575	0	467
2012	5	5	259,977	12,130	0	139
2011	15	15	288,373	44,672	0	467
2010	0	0	740,085	950	0	23
2009	0	0	986,777	1,846	0	0
2008	8	8	948,340	78,331	0	1,399
2007	14	14	752,626	107,992	0	6
2006	19	19	314,221	60,124	0	529
2005	6	6	570,261	36,597	0	1,693
2004	5	5	922,688	45,486	0	3,719
2003	5	4	1,151,133	48,650	0	7,218
2002	1	1	3,518,723	19,920	0	5,642
2001	2	1	3,519,764	51,490	0	4,172
2000	2*	2*	2,259,829	46,244	0	9,514

#4 LDPE	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	3	2	21,309,912	319,935	0	306,320
2013	2	1	27,124,410	384,458	0	167,660
2012	2	1	22,943,164	323,117	0	200,156
2011	1	1	21,433,162	305,845	0	25,058
2010	1	1	17,732,929	134,941	0	9,340
2009	1	1	10,393,343	85,146	0	5,705
2008	0	0	8,828,872	14,277	0	3,222
2007	0	0	6,888,846	10,778	0	5,543
2006	0	0	6,462,289	5,782	0	12,055
2005	0	0	6,900,494	8,140	0	1,265
2004	0	0	5,862,416	2,951	0	473
2003	0	0	7,301,050	2,575	0	13,214
2002	0	0	13,679,022	2,417	0	10,423
2001	1	0	14,066,167	9,638	0	106,864
2000	0*	0*	893,623	228	0	47
#5 PP	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	15	13	1,472,747	190,362	0	42,866
2013	11	10	831,473	79,852	0	14,400
2012	6	5	2,518,323	129,398	0	17,068
2011	6	3	1,065,288	34,744	0	29,587
2010	4	4	695,958	24,392	0	2,890
2009	1	1	1,353,506	12,435	0	3,300
2008	1	1	1,709,379	13,082	0	623
2007	3	3	2,210,175	77,063	0	572
2006	2	2	3,945,154	73,484	0	3,867
2005	1	1	3,074,850	22,976	0	942
2004	1	1	3,139,197	21,889	0	0
2003	1	1	1,790,682	12,098	0	6,925
2002	2	1	1,107,605	16,537	0	5,057
2001	8	7	514,294	34,721	0	6,094
2000	10*	10*	811,660	79,025	0	2,529
#6 PS	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	17	17	108,792,272	18,432,197	0	1,167,758
2013	19	19	94,851,400	18,123,173	0	963,780
2012	18	18	80,123,381	14,661,171	0	756,930
2011	10	10	71,353,426	7,247,675	0	270,644
2010	8	8	61,330,815	4,664,795	0	309,558
2009	3	2	62,646,529	1,309,518	0	429,732
2008	1	1	51,728,106	607,647	0	21,768
2007	1	1	33,996,598	387,283	0	40,131
2006	1	1	32,432,195	247,029	0	12,488
2005	1	1	32,641,452	205,317	0	19,544
2004	0	0	52,667,652	82,155	0	22,238
2003	0	0	74,408,481	32,680	0	50,193
2002	0	0	73,390,428	26,699	0	9,144
2001	0	0	49,856,952	39,758	0	13,855
2000	0*	0*	26,362,287	66,534	0	3,281
#7 OTHER	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	4	4	74,048,712	2,635,211	0	290,531
2013	6	5	57,391,420	3,059,219	0	373,112
2012	6	5	52,566,232	2,754,717	0	446,632
2011	8	7	49,979,611	3,374,367	0	628,976
2010	11	10	27,481,289	2,864,262	0	378,301
2009	9	8	37,945,726	2,998,099	0	383,619
2008	7	7	35,934,816	2,427,064	0	271,432
2007	7	6	40,366,526	2,579,342	0	266,837
2006	5	4	41,525,903	1,788,663	0	229,111
2005	6	6	29,787,510	1,801,073	0	76,924
2004	10	10	25,369,712	2,541,878	0	126,225
2003	1	1	25,520,391	290,781	0	33,095
2002	0	0	20,544,424	41,234	0	10,531
2001	0	0	10,842,578	19,820	0	10,112
2000	1*	1*	14,656,909	80,409	0	23,362

BIMETAL	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	27	26	33,363,634	8,576,119	0	957,200
2013	19	18	32,882,023	5,961,712	0	745,045
2012	16	16	28,031,840	4,365,312	0	459,554
2011	17	16	26,417,008	4,286,242	0	288,894
2010	13	12	23,385,562	2,893,998	0	326,352
2009	10	10	38,733,488	3,694,325	0	301,084
2008	14	14	31,632,517	4,306,701	0	347,164
2007	10	9	38,942,741	3,699,321	0	401,092
2006	8	8	41,529,914	3,235,096	0	356,523
2005	8	7	47,178,540	3,508,551	0	432,928
2004	6	5	65,019,282	3,020,186	0	1,057,274
2003	6	6	68,296,985	4,098,082	0	520,747
2002	2	1	56,396,942	785,045	0	156,002
2001	1	1	47,846,889	523,120	0	164,993
2000	1*	1*	25,093,499	297,767	0	63,323
1999	11	11	2,270,648	260,797	0	15,370
1998	13	13	2,088,892	264,603	0	10,246
1997	19	19	2,252,193	432,794	0	27,375
1996	17	17	2,230,519	388,095	0	29,890
1995	21	21	2,268,190	484,539	0	21,375
1994	17	17	2,506,373	430,610	0	10,470
1993	19	19	3,655,432	683,945	0	16,945
1992	12	12	6,453,684	796,519	0	42,330
1991	14	14	6,353,803	878,207	0	59,958
1990	3	3	10,529,837	314,760	0	34,415
1989	2	2	10,643,975	199,890	0	354,570
1988	0	0	7,683,421	13,237	0	300

ALL MATERIALS	REDEMPTION	RECYCLING	SALES	RECYCLED	REFILLABLE	POSTFILLED
2014	84	80	22,153,643,169	17,781,266,369	36,520	1,623,911,990
2013	89	85	21,356,759,006	18,246,526,908	456	1,596,394,522
2012	84	82	21,169,889,105	17,257,111,007	558	1,396,530,794
2011	84	82	20,419,471,508	16,770,133,305	808	1,288,167,953
2010	84	82	20,263,724,097	16,536,683,625	618	1,264,478,395
2009	84	82	20,998,494,573	17,250,912,110	1,697	1,198,128,709
2008	75	74	21,953,226,128	16,169,529,337	7,525	1,002,845,178
2007	69	67	21,924,621,254	14,738,050,903	9,638	1,027,841,756
2006	61	60	21,920,558,259	13,197,711,698	2,821	935,026,546
2005	62	61	20,485,271,759	12,417,324,219	2,130	895,371,171
2004	61	59	20,237,496,286	12,034,573,093	128,867	838,076,736
2003	56	55	19,242,495,939	10,533,460,820	364,085	842,851,246
2002	60	58	18,176,119,077	10,629,955,059	380,457	837,793,099
2001	62	60	17,513,174,192	10,518,747,707	378,452	887,174,501
2000	62*	61*	16,558,409,123	10,190,977,803	4,193,806	808,294,098
1999	76	74	13,169,728,648	9,742,102,332	56,547,053	761,054,109
1998	76	74	13,107,568,019	9,646,672,886	78,152,008	751,835,350
1997	78	76	12,889,096,434	9,666,106,446	90,836,718	759,117,911
1996	78	76	12,508,701,533	9,439,039,918	102,421,509	685,927,048
1995	83	81	12,237,873,040	9,786,426,401	111,828,496	769,229,625
1994	80	79	12,803,124,621	10,024,685,614	125,310,440	612,123,877
1993	82	81	12,579,084,739	10,083,591,274	147,140,942	642,306,615
1992	85	82	13,044,123,346	10,469,716,585	168,996,240	982,078,388
1991	82	80	13,110,373,852	10,339,154,185	198,954,148	699,826,773
1990	70	70	13,682,053,525	9,294,834,458	215,792,631	345,400,108
1989	56	56	12,935,531,202	6,923,416,826	304,045,641	267,162,865
1988	55	52	12,562,618,766	6,105,812,527	441,803,396	685,648,387

* Due to the addition of new beverages on January 1, 2000 from the passage of SB332, the calculation of the redemption and recycling rates for 2000 was based on the sales and return data reported from March - December 2000. This is to account for the two month sales lag. However, the totals for the sales, recycled, refillable and postfilled columns are for January - December 2000.

** Beginning 2003, all recycling and redemption rates are presented as whole numbers.