NAPCOR

National Association for PET Container Resources
10800 Sikes Place, Suite 240
Charlotte, North Carolina 28277
704.845.5070
www.napcor.com

PETE

2003 REPORT ON POST CONSUMER PET CONTAINER RECYCLING ACTIVITY

FINAL REPORT

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INTRODUCTION

This report is intended to give the reader an overview of the recycling of injection, stretch blow molded PET containers in the United States. Information contained in this report was obtained through surveys conducted by the Association of Postconsumer Plastic Recyclers (APR), R.W. Beck, Moore Recycling Associates, US Department of Commerce and data generated internally by the National Association for PET Container Resources (NAPCOR). In order to present as accurate a picture of these activities as possible, additional data and information was obtained through discussions with individual collectors, intermediate processors, reclaimers, converters, brokers, exporters, resin producers, bottle manufacturers, public recycling officials, consultants and key industry members.

PET BOTTLES AVAILABLE FOR COLLECTION

The rate of growth for PET bottles and jars in 2003 was just slightly higher than 2002 at 6.5%. Considering the disastrous sales of beverages posted in May and June due to bad weather this could have been a much better number. Once again most of the growth was attributable to around a 23% bump in water bottle sales and almost 10% in isotonics with CSD being flat or less. While a number of new PET packages were seen in the market, none were in high volume opportunities such as beer and small (<20 oz.) single serve soft drinks. These applications which require increased barrier are developing more slowly than expected as end-users continue to evaluate the performance and economics of the multitude of available barrier enhancing technologies.

NAPCOR has determined that the total number of pounds of PET bottles and jars available in the United States for recycling in 2003 was 4.292 billion. This number reflects the total amount of PET bottle resin used by U.S. bottle manufacturers from U.S., foreign and recycled sources less scrap generated and not reused, exported bottles and preforms and bottles less than eight ounces in size. This number is used in this report as the denominator in determining both the recycling and utilization rates.

POST CONSUMER PET BOTTLE PURCHASES

The amount of post consumer PET bottles collected for recycling and sold in the U.S. was 841 million pounds (mmlbs) in 2003. The breakdown of buyers is as follows:

518	- Purchased by U.S. Reclaimers
321	- Purchased by Export Markets
2	- Composite Applications (other)
841	- Total Amount of Post Consumer Bottles

U.S. reclamation companies reported purchasing slightly fewer post consumer bottles in 2003 than in 2002. Conversely, the 321 mmlbs. of post consumer bottles exported consisting of 22.5 mmlbs. to Canada with the balance going to China and represents a 16.7% increase over the record set in 2002. 31 million pounds of the total exported was in the form of dirty flake, a reflection that traders are trying to comply with the Chinese ban on the importation of post-consumer plastic bales.

U.S. reclamation companies continued to supplement their purchase of the U.S. post consumer bottles with bottles imported from Canada, Mexico and Europe totaling 61.8 mmlbs., as well as purchasing alternative feedstocks, i.e. strapping, sheet, and pre-consumer bottles totaling 42.4 mmlbs.

Post Consumer Bottles – Gross Weight Purchases (mmlbs.)	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
A. Purchased by U.S. Reclaimers + Other	605	549	580	656	588	599	600	522	520
B. Purchased by Exporters	170	148	111	89	183	170	234	275	321
C. Total U.S. Material Recycled (A+B)	775	697	691	745	771	769	834	797	841
D. Post Consumer Bottle Imports	46	87	66	101	60	69	70	57	62
E. Total Used by U.S. Reclaimers (A+D)	651	636	646	757	648	668	670	579	582

2003 GROSS RECYCLING RATE

Total U.S. Bottles Collected and Sold for Recycling	**841 mmlbs**	**=**	19.6%
Total U.S. Bottles Available for Recycling	**4,292 mmlbs**		

Year	*Total U.S. Bottles Collected (MM lbs.)*	*Bottles on U.S. Shelves (MM lbs.)*	*Gross Recycling Rate*
1995	775	1,950	39.7%
1996	697	2,198	31.7%
1997	691	2,551	27.1%
1998	745	3,006	24.8%
1999	771	3,250	23.7%
2000	769	3,445	22.3%
2001	834	3,768	22.1%
2002	797	4,007	19.9%
2003	841	4,292	19.6%

PET BOTTLE BALE MARKETS

The stability seen in the bale markets during 2002 continued for the first four months of 2003 then yielded to a dramatic increase in pricing even while virgin prices were falling. This phenomenon was brought on by aggressive pricing by Chinese buyers throughout the country and US reclaimers were confronted with the choice of competing or having nothing to run. Prices hovered near $.20/lb during the second half of the year for most large suppliers with export prices on the east coast sometimes exceeding those on the west coast. The aggressive export markets produced another oddity during the second half of the year when much deposit material was priced lower than curbside, a result of contracts tied to virgin pricing.

NON DEPOSIT PET BOTTLE BALE PRICES
(Picked up, Truckload quantities, Sellers dock)

	LOW	HIGH
JANUARY	$.07/ LB	$.09/ LB
FEBRUARY	.07	.09
MARCH	.07	.09
APRIL	.07	.09
MAY	.07	.10
JUNE	.09	.14
JULY	.10	.15
AUGUST	.10	.16
SEPTEMBER	.12	.17
OCTOBER	.14	.20
NOVEMBER	.15	.18
DECEMBER	.14	.17

RECLAMATION CAPACITY

During 2003, 14 US reclamation plants produced clean RPET flake from post-consumer bottles. The total capacity of 877 million pounds gross weight in represents a slight increase over 2002 a result of two expansions and several de-bottlenecking projects. The plants consumed post consumer bottles, pre consumer bottles, post consumer strapping and other feedstock totaling 622 mmlbs for a capacity utilization rate of 71%. Six are vertically integrated back to end product (2 bottles, 2 carpet, 2 strapping) and account for slightly more than 55% of total capacity. Six plants have technologies that have received letters of non-objection (LNO) from the Food and Drug Administration, which allows the RPET produced to be used in direct contact with various food and beverage products.

RPET Production Summary (MMlbs.)	1995	1996	1997	1998	1999	2000	2001	2002	2003
A. RPET Produced by U.S. Reclaimers from U.S. Bottles	496	438	486	513	457	476	476	401	412
B. RPET Produced by U.S. Reclaimers from Imported Bottles	38	70	55	75	47	51	44	46	49
C. Total RPET Production U.S. Reclaimers (A+B)	534	508	541	588	504	527	520	447	461
D. Clean Flake Equivalent from U.S. Bottles Exported	153	134	92	75	154	143	184	212	255
E. Total Clean Flake from U.S. Bottles (A+D)	622	572	578	588	611	619	660	613	667

PET UTILIZATION RATE

Clean Flake Produced from U.S. Post Consumer Bottles	412 mmlbs		
+			
Clean Flake Equivalent of U.S. Bottles Exported	255 mmlbs	=	15.5%
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Total U.S. Bottles Available for Recycling	4,292 mmlbs		

The increase in the utilization rate is a direct result of reclaimers lowering their yield losses mostly by recovering PET bottles previously discarded. In 2003, reclaimers reported producing 5 mmlbs. of mixed color RPET that helped improve yields from 77% to 79.5%.

Year	Clean Flake Equivalent (MM lbs.)	Bottles on U.S. Shelves (MM lbs.)	Utilization Rates
1995	622	1,950	31.9%
1996	572	2,198	26.0%
1997	578	2,551	22.7%
1998	588	3,006	19.6%
1999	611	3,250	18.8%
2000	619	3,445	18%
2001	660	3,768	17.5%
2002	613	4,007	15.3%
2003	667	4,292	15.5%

2003 RPET MARKET

2003 saw RPET consumption by US converters drop to 552 mmlbs - its lowest level since 1996. Even so, US reclaimers supplied 83.5% or 461 mmlbs of the demand, the balance coming from Canadian, European, South American, and Mexican reclaimers in that order. This reflected the inability of reclaimers to stay competitive with alternative feed stocks the second half of the year and a poor economy. Caught between escalating bale costs caused by aggressive export buyers and falling VPET prices due to new plant capacity, many reclaimers cut back production and /or built inventory.

While fiber applications continue to use the majority of RPET produced, its market share dropped for the third straight year. This directly reflects the dramatic reduction of textile customer applications due to foreign competition. What's left in the way of carpet applications, industrial non-wovens and fiber fill should hopefully stay competitive near term.

And unexpected jump in RPET demand from sheet producers stemmed directly from high price and lack of availability of Q2 VPET during the second and third quarters.

RPET sale into engineered resins remained flat indicating that this may be the threshold volume as buyers purchased for customers demanding a post consumer pedigree and little else.

The jump in RPET use for food and beverage bottles directly reflects increased use by Coke and Pepsi.

The dramatic drop in RPET consumption in non-food bottles was caused by the growing awareness that the 25% content required by California would probably not be necessary. This combined with favorable Q2 VPET contracts made the RPET alternative less attractive.

The miscellaneous or other category includes all other applications including coatings, color carriers, composites, thermal and chemical. The increase came from a number of new applications most of them involved in the TOP Bottle Project and new market penetration of existing technologies.

RPET Product Categories
RPET used (mmlbs)

	1996	1997	1998	1999	2000	2001	2002	2003
Fiber	292	320	415	417	452	435	344	296
Sheet & Film	69	71	89	68	65	37	18	32
Strapping	66	58	67	80	101	82	83	77
Engineered Resin	24	26	30	26	27	24	10	10
Food & Beverage Bottles	24	41	52	68	54	77	86	106
Non-Food Bottles	71	53	47	50	40	44	43	24
Other	1	1	7	9	5	2	4	7
Total U.S. Converter Consumption	***547***	***570***	***707***	***718***	***744***	***701***	***588***	***552***

SUMMARY

The amount of bottles available in 2003 for recycling increased to almost 4,300 mmlbs. The majority of this growth was posted in single serve water and isotonic containers. Bottle volumes collected for recycling increased 44 mmlbs most of which reflected a huge increase in market share (but not recycling rate) in California and the reinstatement of plastics recycling in New York City. All of this additional volume, however, found its way to Chinese markets. While US and Canadian reclaimers essentially purchased the same volumes as 2002, Chinese buyers became the price leaders from the second quarter on and ended up buying an estimated 299 mmlbs or 35% of the total 841 mmlbs collected in the US. This calculates to a recycling rate of about 19.5%, slightly down from 2002.

Business-wise, the year started well for most market segments of the PET bottle recycling industry but ended on a decidedly sour note. First quarter VPET price increases allowed reclaimers to re-establish diminished margins while taking advantage of relatively low bale pricing in the $.08/lb range. However, by the second quarter a combination unanticipated excess VPET inventories caused by the bad weather that dramatically reduced beverage sales in much of the country during May and June and the re-emergence of aggressive export bale buyers began to negatively impact the RPET market economics. This dynamic of shrinking VPET prices and increased bale prices continued for the rest of the year. While most of the intermediate processors applauded this run-up of bale prices that by third quarter had doubled the price and by fourth quarter had put many suppliers in the $.20/lb range, the price for RPET flake remained price bound as VPET prices continued to slip. The only bright spot for VPET and RPET producers was unexpected demand from the sheet market during the late second and early third quarter. This allowed Q2 virgin to stabilize even while Q1 pricing was beginning to erode and made RPET pricing once again attractive. Most merchant reclaimers were able to fend off price reductions from the bottle markets by shifting sales to sheet producers, but by the fourth quarter this opportunity has largely been dissipated by the wave of new resin production. The oversupply of VPET resulting from these new plants caused significant VPET price deterioration until the end of the year when price increases in chemical raw materials forced resin makers to seek commensurate increases. By the third quarter most reclaimer margins were so squeezed that most cut back production leaving export buyers to compete mostly among themselves for bales. One bright spot for resin producers was the tightness of raw materials globally that resulted in even higher prices for Asian resin producers and rendered them less competitive in North American markets. However by years end no part of the PET bottle market was experiencing very profitable conditions, not the resin producers, not the bottle manufacturers, and certainly not the reclaimers.