



Drink up!

Beverage container recycling update

By Samantha Millette & Jason Wilcox

Canadians should be proud of their success when it comes to recovering beverage containers. In 2016, approximately 10 billion non-refillable beverage containers sold in Canada were collected for reuse and/or recycling.

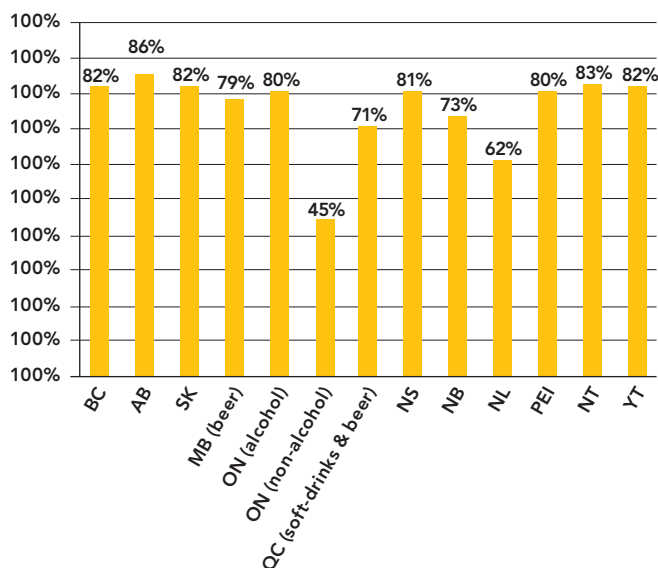
This is just one of the findings in the ninth edition of CM Consulting's *Who Pays What* report, released in October 2018. Produced since 2002, the report provides a comprehensive overview of container recovery programs in each province, including the latest data on performance and costs. The report also delves into the economic and environmental benefits of beverage container reuse and recycling, processes, end-markets, and the use of recycled content.

Performance: How did we do?

When it comes to single-use beverage containers, Alberta achieved the highest recycling rate in 2016 at 86 per cent. Ontario's recycling rate for non-refillable, non-alcohol containers for that year was only 45 per cent, the lowest in the country. This comes as no surprise; regardless of material type, these containers have always been recycled at higher rates in jurisdictions that have deposit return schemes (DRS).

(Continued on page 20) ■

Figure 1: Provincial Recycling Rates, All Non-Refillable Containers (2016)



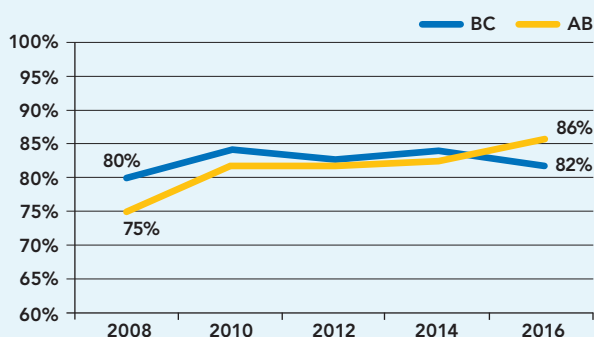
Note: Reliable performance rates for non-deposit containers in Manitoba and Quebec were not available for 2016.



Financial Incentives Drive Returns - *The higher the deposit, the higher the return rate*

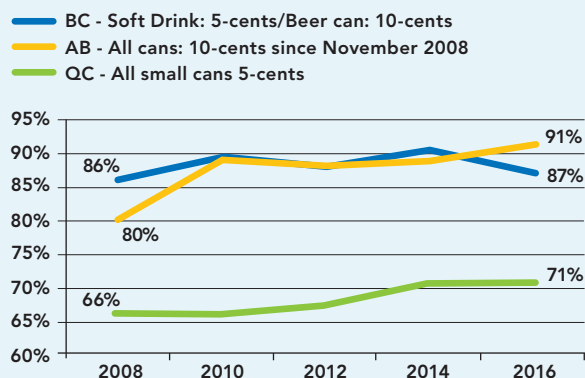
In 2008, Alberta had a total recovery rate of 75 per cent for all non-refillable containers combined. The province raised the deposit from five to 10 cents on containers up to one litre, and from 20 to 25 cents on containers over one litre. The recovery rate jumped immediately to 82 per cent in 2010, and by 2016 had climbed to 86 per cent (see Figure 2). In contrast, rates in British Columbia, where deposits have remained low – at five cents for non-alcohol containers up to one litre and 20 cents for containers over one litre – have increased only marginally, from 80 per cent to 82 per cent over the same time period.

Figure 2: Recycling Rates for All Non-Refillable Containers, British Columbia vs. Alberta (2008-2016)



If we look at recycling rates for aluminum cans and the different deposit levels on those cans in three jurisdictions (BC, Alberta, and Quebec), we can clearly see the effect that higher deposits have (see Figure 3). In Alberta, where the deposit on all small aluminum cans is 10 cents, the recycling rate rose from 80 per cent to 91 per cent from 2008 to 2016. In British Columbia, where the deposit for beer cans is 10 cents, but the deposit for soft drink cans is only five cents, the rate has remained stagnant in that time frame. In Quebec, the recycling rate for small aluminum cans is much lower than in either BC or Alberta because both beer and soft drink cans carry only a five-cent deposit.

Figure 3: Recycling Rates for Deposit-Bearing Aluminum Containers in BC, Alberta, and Quebec (2008-2016)





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RECYCLING



Looking at material-specific recycling rates, aluminum cans are recycled at a rate of approximately 71 per cent nationally. Non-refillable glass bottles showed a slightly lower recycling rate at 68 per cent. The clear underperformer when it comes to single-use containers is PET bottles, with a national recycling rate of only 59 per cent.

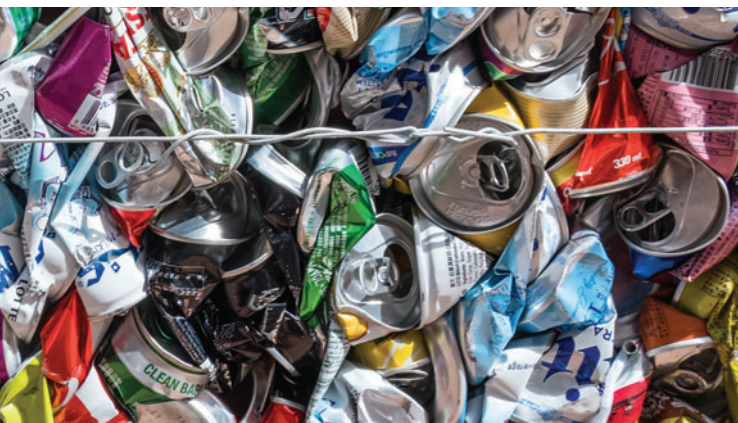
It's important to note that when contamination is factored in, the overall amount of PET and glass actually recycled is even lower. This is because, even in DRSs, all bales of beverage containers experience some level of yield loss due to the caps, labels, and glue that remain on the containers after sorting. Some of these losses are fines, which can be sold as a by-product, but most are disposed of in landfill.

Determining those downstream losses is a critical step to attaining real recycling values. This is clearly outlined in the Canadian Standards Association's Recycling Guideline as well as being a legislative change within the European Union's new Waste Framework Directive.

As in previous years, refillable beer bottles continue to be recycled at a very high rate, both nationally and on a provincial level. Across Canada, approximately 95 per cent of all refillable beer bottles are collected for recycling, and all provinces achieve a recycling rate of 91 per cent or higher. Unfortunately, statistics from the Brewers Association of Canada show that there has been a dramatic decline in the use of such refillable containers: from 2009 to 2017, nationwide market share for beer sold in glass bottles dropped from 59 per cent to 30 per cent of all hectolitres sold. Several factors are attributable to this decline, including a shift in the retail landscape towards larger retailers or "big box" stores, lack of policies in place to promote refillables, and changes in the relative costs of container materials.

Away-from-home collection

The last decade has seen a significant shift in the way Canadians consume beverages. It is estimated that 30 to 40 per cent of beverages are consumed and discarded away-from-home (AfH), and as the millennial generation continues to grow as a percentage of Canada's total population, this number is likely to rise.



Besides the obvious environmental benefits, beverage container recycling programs generate significant economic benefits as well.

In an effort to encourage the recycling of these containers, a number of Canadian jurisdictions, including the province of Manitoba, the City of Richmond (B.C.), and the City of Regina (Saskatchewan) have launched pilot projects and long-term programs aimed at collecting these containers. Until December 31, 2016, the province of Quebec also had a program which provided funding to municipalities to install recycling equipment in public spaces.

Economic and environmental benefits

In 2016, the recycling and reuse of beverage containers in Canada saved 18.1 million GJ of energy and avoided over 1.1 million tonnes of GHG emissions. This is equivalent to taking more than 245,000 cars off the road.

Besides the obvious environmental benefits, beverage container recycling programs generate significant economic benefits as well. Although sometimes difficult to quantify, these benefits must be considered if we are to understand the full picture of beverage container recycling costs in Canada.

In addition to job creation and economic growth, DRS are good for municipal budgets. While DRS may divert potential sources of revenue from curbside programs, they also result in significant net cost savings, resulting from the reduced or avoided costs of collection, treatment, and disposal from the municipal waste management system.

Who Pays What presents a compilation of 27 studies that examined the quantifiable costs and benefits to municipalities of implementing or expanding a DRS for beverage containers. Although different in scope, location, author, and year, each study reported significant cost savings for municipalities, even after lost material revenue was taken into account.

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From North America to Australia and across Europe, over 40 jurisdictions worldwide have implemented DRSs for beverage containers, and Canada is clearly among the leaders.

What's New?

Improved quality control at Alberta depots: In 2016, Alberta became the first province in Canada to implement Tomra's automated counting machines in a processing facility. Installed for quality control purposes, this technology resulted in increased performance related to the Alberta Beverage Container Recycling Corporation's (ABCRC) auditing of material shipped from Alberta depots. These machines have also resulted in increased system efficiencies because they require less space, less energy, and allow for quicker and more accurate counts than the previous counting technology.

Milk containers added to Saskatchewan's program: As of April 1, 2017, "ready-to-serve" milk containers are included in the same deposit system as other beverage containers accepted at SARCAN depots. (Previously, the recycling of milk containers was covered under the province's multi-material recycling program, which launched on January 1, 2016.) The addition of milk containers to Saskatchewan's deposit program means that in addition to a refundable deposit, milk containers are now subject to an environmental handling charge (EHC).

Deposit rate increases in Saskatchewan: Another change affecting Saskatchewan's deposit program in 2017 was the increase of some of the deposit refund amounts. As of April 1, 2017, the deposit/refund amount for larger (one-litre or greater) plastic and aluminum/tin/metal containers is 25 cents, up from 20 cents. Gabletop cartons and aseptic containers have also seen their deposit levels increase from five cents (all sizes) to 10 cents for containers less than one litre and 25 cents for containers one litre or greater. The deposit amount for glass containers remains unchanged. This is the first time deposit refund amounts have increased in 25 years.

There have also been changes to the non-refundable EHC. Effective April 1, 2018, the EHC costs consumers five cents for tetra cartons (up from three cents), seven cents for aluminum cans (up from five cents), eight cents for plastic jugs/bottles (up from six cents), and nine cents for glass containers (up from seven cents).

NWT's amended beverage container regulations come into effect: On February 1, 2016, amended Beverage Container Regulations came into effect. One of the key changes

to the program is a net increase to container handling fees. Changes to these fees were necessary in order to allow the program to be self-sustaining. The new Regulations also simplify container categories. In the past, surcharge amounts were based not only on the type and size of the container, but also on the contents, with alcohol containers being a different category. There are only two main categories now, based on size: up to one litre and more than one litre.

Encorp Atlantic launches new pilot project: As part of a series of pilot projects aimed at making the redemption process more convenient for its customers, Encorp Atlantic launched a new initiative in April 2017 called Re360. The Re360 recycling boxes, now being used at four redemption centres are a natural extension of the Express Bags, which were used in a pilot project from May 2015 to May 2017. Customers who use the new green boxes are given priority service when they drop off their containers, and do not have to wait in line to receive a refund. For each box filled with 60 containers, customers receive a \$3 cash payout on the spot.

Conclusion

Over the past few years, there has been renewed interest in DRS as a tool to collect high quantities of beverage containers, which has evolved to now include aseptic containers, gable top cartons, and even coffee cups. From North America to Australia and across Europe, over 40 jurisdictions worldwide have implemented DRSs for beverage containers, and Canada is clearly among the leaders. ☺



Samantha Millette is an environmental consultant specializing in the areas of waste management research, policy, and planning. She is the owner of SAMI Environmental.



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