

Part 4: System Financing

Consumer Fees

As with any diversion program, there are costs associated with implementing and operating a DRS for beverage containers. In many jurisdictions, the beverage industry—that is, the producers, manufacturers, and distributors of beverages—pays the bulk of these costs. In Canada, however, our programs have been designed in such a way to minimize or eliminate the industry’s financial obligation by passing on the costs to consumers in the form of a front or back-end fee. Table 6 shows the consumer fees charged in each province and territory, by container type, as of July 2018. Ontario and Quebec do not have consumer fees and are therefore they are excluded from the table.

Table 6 Consumer Fees by Province and Material

Consumer Fees in Cents per Unit Sold (as of July, 2018)												
Province	BC	AB	SK	MB	ON	QC	NS	NB	NL	PE	YT	NT
Type of Fee	CRF	CRF	EHC	CRF	-	-	Half-Back	Half-Back	Half-Back	Half-Back	RFF*	CHF*
Aluminum Cans	1	1	7	2			5	5	3	5	5	8
PET up to and including 1L	3	2	8	2			5	5	3	5	5	8
PET over 1L	4	10	8	2			5	5	3	5	10	10
PVC or HDPE up to and including 1L	3	2	8	2			5	5	3	5	5	8
PVC or HDPE over 1L	4	10	6	2			5	5	3	5	10	10
HDPE Milk up to and including 1L		2									5	8
HDPE Milk over 1L		10									5	10
Plastic up to and including 1L		2	8	2			5	5	3	5	5	8
Plastic over 1L		10	8	2			5	5	3	5	10	10
Polystyrene Cups (with sealed foil lid)	3	2		2			5	5	3	5		
Polypropylene up to and including 1L	3	10	8	2			5	5	3	5	5	8
Polypropylene over 1L	4	10	8	2			5	5	3	5	10	10
Pouch up to and including 1L	0	0		2			5	5	3	5		5
Glass up to and including 1L	8	8	9	2			5	5	3	5	5	13
Glass over 1L	16	9	9	2			5	5	3	5	10	13
Drink box up to and including 500ml	1	4	5	2			5	5	3	5	5	5
Drink box 501ml to 1L	5	4	5	2			5	5	3	5	5	5
Drink box over 1L		11	5	2			5	5	3	5	10	10
Gabletop up to and including 500ml	0	2	5	2			5	5	3	5		5
Gabletop 501ml to 1L	0	2	5	2			5	5	3	5		5
Gabletop over 1L	6	10	5	2			5	5	3	5		10
Gabletop Milk up to and including 1L		2										5
Gabletop Milk over 1L		10										10
Bi-metal up to and including 1L	5	3	7	2			5	5	3	5	5	5
Bi-metal over 1L	0	0	7	2			5	5	3	5	10	10
Bag-in-the-Box over 1L	0	0		2			5	5	3	5		10
Wine/Spirits under 500ml							5	5	10	5		
Wine/Spirits equal to or greater than 500ml							5	10	10	10		



category not applicable
material covered under another category

* In NT, the 1 litre container for non-dairy product is included with the over 1 litre containers.

For dairy products, a one-litre container is included with the under 1 litre containers

*In Yukon, the size threshold is 750 ml. All containers of 750ml or more,

regardless of contents or material, are charged 10 cents RFF.

Container Recycling Fee (CRF) in a Deposit-Return System

A Container Recycling Fee (CRF) is non-refundable fee levied on the purchase of certain beverage containers in B.C. and Alberta. It is separate from the deposit and represents the net cost to collect and recycle beverage containers after other revenues (from unredeemed deposits and the sale of recyclable materials) are used. Unlike deposits, the CRF fluctuates annually and varies with the value of the material collected and the collection rate. Containers with high collection rates generate less unredeemed deposit revenue and therefore require a higher CRF. The opposite is true for containers with low collection rates.

As of February 1, 2018, the CRF in B.C. ranges from no charge to 16-cents per unit, depending on the type and size of container. With the exception of glass bottles over 1L, which saw their CRF decrease by 24-cents, the CRF for all other container types increased by 1-cent per unit between 2016 and 2017.⁷⁷

In Alberta, the recycling fee ranges from no charge to 11-cents per unit, with Aseptic containers over 1L having the highest fee. Some containers, including bag-in-a-box over 1L, pouches 0-1L, and bi-metal cans over 1L, do not require a CRF since the revenue they generate from unredeemed deposits is high enough to cover the costs of recycling.

Typically, the CRF is paid by beverage producers and passed down to retailers, who in turn pass it on to consumers. It should be noted, however, that the decisions by producers to pass on the CRF to retailers and by retailers to pass on the CRF to consumers are discretionary. Some retailers may choose not to pass on the CRF or to show it separately so that the consumer can see the charge on their receipt.

Environmental Handling Charge (EHC)

In addition to paying a refundable deposit, consumers who purchase non-refillable, ready-to-serve beverages in Saskatchewan must pay a non-refundable Environmental Handling Charge (EHC), which varies by container type and size. As of April 1, 2018, EHCs range from 5- to 9-cents per unit. These fees are collected by the retailer at the point of purchase and remitted to the Government of Saskatchewan to fund SARCAN Recycling. The province retains surplus EHCs within the General Revenue Fund.

Container Recycling Fee (CRF) as an Industry Imposed Levy

In Manitoba, consumers are charged a 2-cent CRF on non-alcoholic beverage containers. This fee, which is different from the CRF charged in B.C. and Alberta, is collected, monitored, and overseen by CBCRA, and is used to pay for up to 80% of the net costs of municipalities for operating residential recycling programs. It is also used to finance away-from-home recycling initiatives, including the recycling bins and associated signage and P&E material that Recycle Everywhere provides free of charge to municipal, IC&I, and other public space recycling partners across Manitoba. Like other consumer fees, it is common for this fee to be passed on from producers to retailers to consumers.

The Half-Back System

Nova Scotia, New Brunswick, and PEI employ a half-back system. In these systems, only half of the initial deposit paid on the purchase of a non-refillable beverage is refunded to the consumer when the empty container is returned for recycling. Fifty-percent of the non-refunded portion of the deposit—plus revenues generated from commodity sales—is used to pay for program costs, while the remaining 50% typically goes towards provincial waste reduction and recycling initiatives.

Newfoundland and Labrador's deposit system operates in a similar way. For alcohol containers, the refund on a 20-cent deposit is 10-cents. However, for non-alcohol containers (as well as beer cans, importer beer bottles, and alcoholic miniatures), the refund on an 8-cent deposit is only 5-cents. In a true half-back system, consumers would receive 4-cents back; this is not possible due to the elimination of the 1-cent coin in 2013.

Recycling Fund Fee (RFF) and Container Handling Fee (CHF)

The recycling fund fee (RFF) and container handling fee (CHF), which are charged in Yukon and the Northwest Territories, respectively, are modeled after the half-back system in that they refund only a portion of the initial

deposit paid on designated beverage containers. In Yukon, 5-cents is refunded on a 10-cent deposit (true half-back) and 25-cents on a 35-cent deposit. In the Northwest Territories, 10-cents is refunded on a 15-, 18-, 20-, or 23-cent deposit, and 25-cents is refunded on a 35- or 38-cent deposit.

Both the RFF and CHF are remitted to the provincial government who uses the funds to pay for program operation (handling, processing and transportation) and to develop and implement promotional and educational initiatives related to the program. In general, these schemes generate far more revenue than is needed to pay for the system. Surplus revenues are placed into a special fund that is kept separate from general revenues. These funds are used to subsidize municipal curbside recycling programs and other provincial environmental initiatives.

How Have Consumer Fees Changed Over Time?

Only in B.C., Alberta, and Saskatchewan has the fee charged to consumers changed in the last decade-plus that this report has been published. The 2-cent increase that took effect in April 2018 in Saskatchewan was the first increase in that province since we began creating WPW. Unlike in other provinces and territories, the fee in B.C. and Alberta changes because it is based on the net cost of collection and recycling and therefore varies with the rate of collection and value of collected material, among other things.

Table 7 Historic Consumer Fees (2003-2018)

Historic Consumer Fees (2003-2018)										
Aluminum cans	BC	AB	SK	MB	NS	NB	NL	PE	YT	NT
2003	0	0	5	2	5	5	3	-	n/a	n/a
2006	0	0	5	2	5	5	3	-	n/a	n/a
2008	0	0	5	2	5	5	3	-	n/a	n/a
2010	2	0	5	2	5	5	3	5	5	5
2012	1	0	5	2	5	5	3	5	5	5
2014	1	0	5	2	5	5	3	5	5	5
2016	1	0	5	2	5	5	3	5	5	8
2018	1	1	7	2	5	5	3	5	5	8
PET over 1 litre	BC	AB	SK	MB	NS	NB	NL	PE	YT*	NT
2003	4	7	6	2	5	5	3	-	n/a	n/a
2006	4	2	6	2	5	5	3	-	n/a	n/a
2008	3	3	6	2	5	5	3	-	n/a	n/a
2010	5	6	6	2	5	5	3	5	10	10
2012	6	5	6	2	5	5	3	5	10	10
2014	6	7	6	2	5	5	3	5	10	10
2016	4	10	6	2	5	5	3	5	10	10
2018	4	10	8	2	5	5	3	5	10	10
PET under 1 litre	BC	AB	SK	MB	NS	NB	NL	PE	YT*	NT
2003	1	3	6	2	5	5	3	-	n/a	n/a
2006	1	1	6	2	5	5	3	-	n/a	n/a
2008	3	2	6	2	5	5	3	-	n/a	n/a
2010	4	2	6	2	5	5	3	5	5	5
2012	3	0	6	2	5	5	3	5	5	5
2014	3	3	6	2	5	5	3	5	5	5
2016	3	2	6	2	5	5	3	5	5	8
2018	3	2	8	2	5	5	3	5	5	8
Glass 0-500 ml	BC	AB	SK	MB	NS	NB	NL	PE	YT*	NT
2003	3	5	7	2	5	5	3	-	n/a	n/a
2006	4	5	7	2	5	5	3	-	n/a	n/a
2008	5	3	7	2	5	5	3	-	n/a	n/a
2010	10	6	7	2	5	5	3	5	5	10
2012	12	6	7	2	5	5	3	5	5	10
2014	12	8	7	2	5	5	3	5	10	10
2016	9	9	7	2	5	5	3	5	5	13
2018	8	8	9	2	5	5	3	5	5	13
Glass over 1 litre	BC	AB	SK	MB	NS	NB	NL	PE	YT*	NT
2003	5	8	7	2	5	5	3	-	n/a	n/a
2006	5	7	7	2	5	5	3	-	n/a	n/a
2008	5	4	7	2	5	5	3	-	n/a	n/a
2010	10	9	7	2	5	5	3	5	10	10
2012	20	10	7	2	5	5	3	5	10	10
2014	25	11	7	2	5	5	3	5	10	10
2016	40	10	7	2	5	5	3	5	10	13
2018	16	9	9	2	5	5	3	5	10	13

*In Yukon in 2016, the size threshold changed to 750 ml. All containers of 750 or more, regardless of contents or material, are charged 10 cents RFF.

As shown in Figures 30 and 31, consumer fee fluctuations are not uniform across all container types, nor within groups of container types even if they were the same material type. Consider B.C., for example; for glass containers over 1-litre, fees increased from 5-cents to 40-cents per container from 2003 to 2016, but then fall back down to 16 cents in 2018. At the same time, per unit fees for glass containers 0-500ml in size increased from 3-cents to 12-cents per from 2003 to 2012, and back down to 9-cents in 2016, where it remains as of 2018.

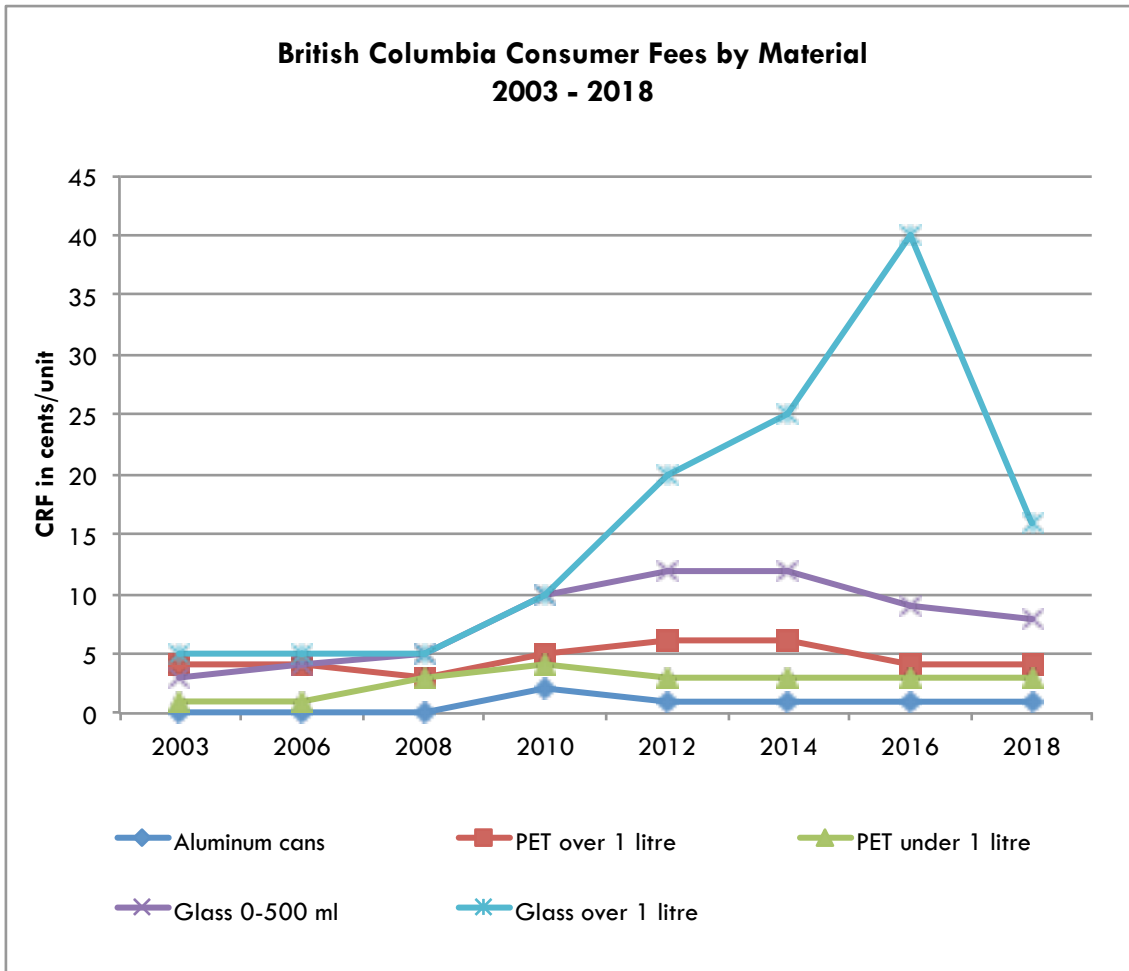


Figure 30 British Columbia Consumer Fees by Material (2003-2018)

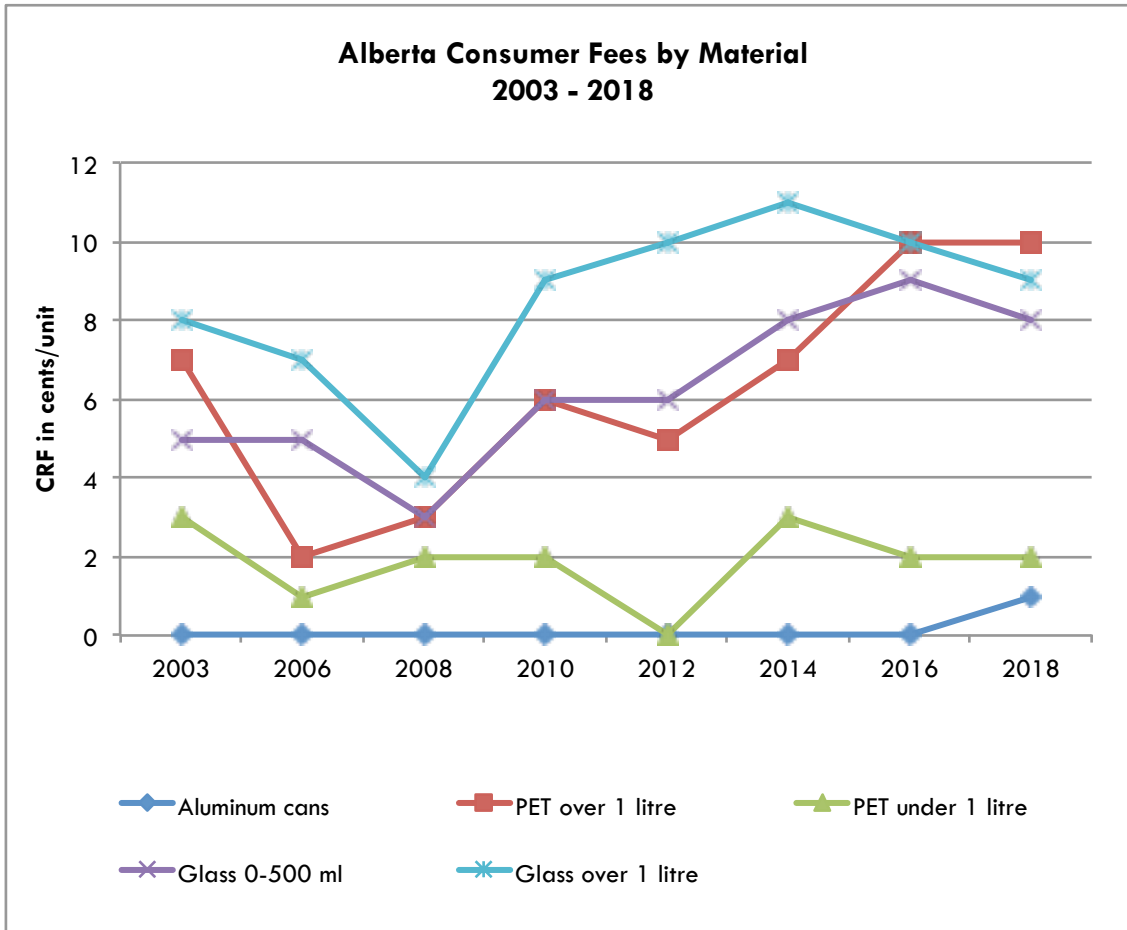


Figure 31 Alberta Consumer Fees by Material (2003-2018)

Deposits

In DRS provinces, retailers are required to collect and remit a deposit from consumers on all applicable beverage containers. Intended to act as an incentive to recycle, a deposit is a small fee that is added to the price of a beverage container at the point of purchase, which is refunded to the consumer when the empty container is returned to an authorized redemption centre or retailer. If the container is not returned, the system keeps the deposit.

In the North and in the Atlantic Provinces, only a portion of the deposit is refunded when a non-refillable container is returned (see section on 'The Half-Back System' above). The portion of the deposit not returned, in addition to any unredeemed deposits, is used to help fund the system and subsidize other provincial environmental initiatives. Typically, these deposits are indicated separately on the sales receipt. They are not a government tax and no funds from the fees are paid to government.

As of November 2017, deposits range from a low of 5-cents to a high of 40-cents per container. Table 8 shows the deposits charged on various types of beverage containers in each province, as well as the refund that is provided to consumers upon return of the container.

Table 8 Deposit and Refund Values by Province and Container Type (as of November 2017)

Province	BC	AB	SK	MB	ON	QC	NS	NB	NL	PEI	YT	NT
Containers ≤ 1L	5/5	10/10										10/10
Containers > 1L	20/20	25/25										25/25
Containers ≤ 750ml											10/5	
Containers > 750ml											35/25	
Carbonated beverage containers						5/5						
Non-alcohol container							10/5	10/5	8/5	10/5		
Metal cans < 1L			10/10								10/5	
Metal cans ≥ 1L			20/20								35/25	
Milk ≤ 1L		10/10										
Milk > 1L		25/25										
Glass bottles ≤ 300ml			10/10								10/5	
Glass bottles 301ml-999ml			20/20								10/5	
Glass bottles ≥ 1L			40/40								35/25	
Plastic bottles < 1L			10/10								10/5	
Plastic bottles ≥ 1L			20/20								35/25	
Juice box & gabletop			5/5									
Tetra Pak & Gabletop < 1L											10/5	
Tetra Pak & Gable Top ≥ 1L											35/25	
Wine & spirit containers ≤ 500ml	10/10	10/10					10/5	10/5	20/10	10/5		
Wine & spirit containers 501ml-1L	10/10	10/10					20/10	20/10	20/10	20/10		
Wine & spirit containers > 1L	20/20	25/25					20/10	20/10	20/10	20/10		
Wine & spirit containers ≤ 630ml					10/10							
Wine & spirit containers > 630ml					20/20							
Non-refillable beer ≤ 1L	10/10	10/10		10/10	10/10			10/5	10/5	10/5		
Non-refillable beer > 1L	20/20	25/25		20/20*	20/20			20/10	20/10	20/10		
Non-refillable beer ≤ 500ml (in NS)							10/5					
Non-refillable beer > 500ml (in NS)							20/10					
Non-refillable beer ≤ 450ml (QC)						5/5						
Non-refillable beer > 450ml (QC)						20/20						
Refillable beer bottles	10/10	10/10	10/5*	10/10	10/10	10/10	10/10	10/10	10/5*	10/10	10/10	10/10

* In SK and NL, 5-cents is retained by bottle depots in lieu of an official handling fee.

*In MB, the 20-cent deposit/refund only applies to containers 2L or larger. All containers less than 2L carry a 10-cent deposit/refund.

Effect of Inflation on Deposit Values

An important issue to consider when setting deposit and refund rates is the effect of inflation. In order to maintain the incentive to return containers, deposit amounts should be increased periodically, in line with inflation; otherwise, the value of the refund relative to the purchase price of a beverage will eventually decrease to a point where there is little to no incentive to recycle. Adjusting for inflation is also important for program operators who rely on unredeemed deposits to finance some of the costs of managing, processing, and transporting recyclables, which have increased significantly over the years.

Despite this and strong evidence that the size of deposits affects the return rate of containers, deposit amounts have remained unchanged in most provinces. Consider British Columbia, for example. The nickel refund on carbonated soft drinks and beer containers that was introduced in 1970 would be equal to about 33-cents in buying power in 2018, according to the Bank of Canada's inflation calculator. This means that if adjusted for inflation, a \$1.98 deposit should be tacked on to a six-pack of beer instead of the 30-cents that is currently charged.

Some provinces, like Alberta, have recognized this problem and have sought to address it. In 2008, the province raised the deposits on all beverage containers, including milk, to 10-cents (from 5-cents) for containers 1L and under and 25-cents (up from 20-cents) for container greater than 1L. After just three years, the collection rate for the primary container types increased by approximately 13%. More recently, in April 2017, Saskatchewan increased the refundable deposit for certain sizes of metal, plastic, paper-based cartons and aseptic containers from 5- to 10-cents and 20- to 25-cents. This was the first change to deposit amounts since 1992.

Container Handling Fees

DRSs offer container handling fees (CHF), an amount paid to retailers or redemption centers (depot or retail) by bottlers and distributors as compensation for collecting, sorting, and packaging empty beverage containers to be taken back to the bottler or distributor. On a long-term basis, CHFs also cover expenses related to investments in reverse vending machines (RVMs), electricity costs, space requirements, and additional personnel required to handle the containers.

Like deposits, CHFs can vary by container type. They can also vary based on the type of facility that receives the containers (i.e. a redemption center or retailer), whether containers are commingled or compacted, and whether collection is done manually or automatically using RVMs.

Table 9 presents CHFs by province and container type. Shaded areas of the table represent container categories that are not applicable to that particular province. It is important to note that in B.C., handling fees paid to grocers are privately negotiated and proprietary, and so are not publicly available. The fees shown for B.C. are from 2016 and are those awarded to depots only.

Table 9 Handling Fees by Province and Container Type (as of January 2018)

Handling fees in cents per unit recovered (as of January 2018)											
Province	BC	AB	SK[3]	MB	QC	NS	NB	NL	PEI	YT	NT
Aluminum Cans	3.37	3.24			2.00	4.27	4.06	4.25	4.13	2.50	2.20
PET up to 1L	5.07	4.82			2.00	4.27	4.06	4.25	4.13	4.00	2.20
PET over 1L	7.89	10.56			2.00	4.27	4.06	4.25	4.13	7.50	4.50
PVC up to 1L	5.07	5.76				4.27	4.06	4.25	4.13	4.00	2.20
PVC over 1L	7.89	11.81				4.27	4.06	4.25	4.13	7.50	4.50
HDPE up to 1L	5.07	5.76				4.27	4.06	4.25	4.13	4.00	2.20
HDPE over 1L	7.89	12.77				4.27	4.06	4.25	4.13	7.50	4.50
Polypropylene up to 1 L	5.07	5.76				4.27	4.06	4.25	4.13	4.00	2.20
Polypropylene over 1 L	7.89	11.81				4.27	4.06	4.25	4.13	7.50	4.50
Sealed Polystyrene Cups											
Polystyrene up to 1L	5.07	5.76				4.27	4.06	4.25	4.13	4.00	2.20
Polystyrene over 1L	7.89	11.81				4.27	4.06	4.25	4.13	7.50	4.50
Pouch (Up to 1L in AL)	4.49	4.93				4.27	4.06	4.25	4.13	4.00	2.20
Plastic up to 500ml	5.07					4.27	4.06	4.25	4.13	4.00	2.20
Plastic 501ml to 1L	5.07					4.27	4.06	4.25	4.13	4.00	2.20
Plastic over 1L	7.89					4.27	4.06	4.25	4.13	7.50	4.50
Glass bottles up to 1L	6.77	7.96			2.00	4.27	4.06	4.25	4.13	4.00	3.50
Glass bottles over 1L	7.89	12.88			2.00	4.27	4.06	4.25	4.13	7.50	3.50
Drink box up to 500ml	5.08	5.32				4.27	4.06	4.25	4.13	4.00	2.20
Drink box 501ml to 1L	5.98	5.32				4.27	4.06	4.25	4.13	4.00	2.20
Drink box over 1L		15.36				4.27	4.06	4.25	4.13	7.50	4.50
Gabletop up to 1L	6.77	6.38				4.27	4.06	4.25	4.13		2.20
Gabletop over 1L	11.03	12.88				4.27	4.06	4.25	4.13		4.50
Bag in the Box over 1L	11.27	23.85				4.27	4.06	4.25	4.13		3.50
Bi-metal up to 1L	5.08	7.56				4.27	4.06	4.25	4.13	4.00	2.20
Bi-metal over 1L	11.27	13.35				4.27	4.06	4.25	4.13	7.50	4.50
Imported beer bottles	5.08	7.96				4.27	4.06	4.25	4.13	4.00	3.50
Liquor and wine ceramic						4.27	4.06	4.25	4.13		
Sleeman bottles		7.10				4.27	4.06	4.25	4.13		
Moosehead Green Bottle						2.57					
Refillable Beer (ISB)	[1]	4.83	2,6 [4]	2.67	0.50	2.74	2.90	5 [4]	2.81	2.50	
Beer Cans		3.24		2.04							
Milk up to 1 litre											2.00
Milk over 1 litre											3.50
Milk jugs	[2]~2.7		\$420/t[5]			\$407					
Milk cartons	[2]~4.09		\$150/t			tonne					
Container included in another category											
Category not applicable											
[1] In BC bottle depots independently negotiate handling fees directly with the beer industry.											
[2] About 166 Depots in BC are paid a handling fee for collecting milk jugs and carton. The fee shown in the table is based on 60 units per bag.											
[3] Saskatchewan does not charge handling fees. SARCAN depots are paid a contracted rate per year, which is generated through the Environmental Handling Charge (EHC).											
[4] In Saskatchewan and Newfoundland a handling fee charged on refillable beer is charged at the back-end from the refund. In SK it is 5 cents at Sarcan depots and 2 cents at SLGA stores who also receive an additional subsidy of 2.6 cents per ISB bottle from BDL. In NL it is 5 cents											
[5] In SK, a variable rate paid to recyclers for milk jugs is based on 80% of the salvage value for that month.											

How Have Handling Fees Changed Over Time?

In the western provinces, where fees are pegged to the actual cost to recycle the material, fees have fluctuated up or down depending on the material and size of the container. The handling fee paid to depots for the most inexpensive to recycle container, the aluminum can, has increased very slightly from 2004 to 2016, from 3-cents to 3.37-cents in B.C., and from 2.8 cents to 3.24 cents in Alberta. Rates have also increased every year or every other year for each material and size in BC. In Alberta, the fee rates for PET and small glass containers dropped in 2008 but increased again after 2010.

In Québec, CHF's have remained constant at 2-cents for all legislated containers since the program began. The Yukon and Northwest Territories have also kept the same CHF's since the start of their programs.

In the Atlantic provinces, CHF's increased slightly every year or every other year. Specifically, in the years 2004-2016 fees in Nova Scotia increased from 3.1-cents to 4.3-cents, while New Brunswick's fees have gone from 3.3-cents to 4.06-cents. In Newfoundland and Labrador and Prince Edward Island, CHF's increased from 3-cents and 3.6-cents, to 4.25-cents and 4.05-cents, respectively over that 12-year period.

Figure 32 below shows fluctuations in the average handling fee paid per unit by province from 2004-2016.

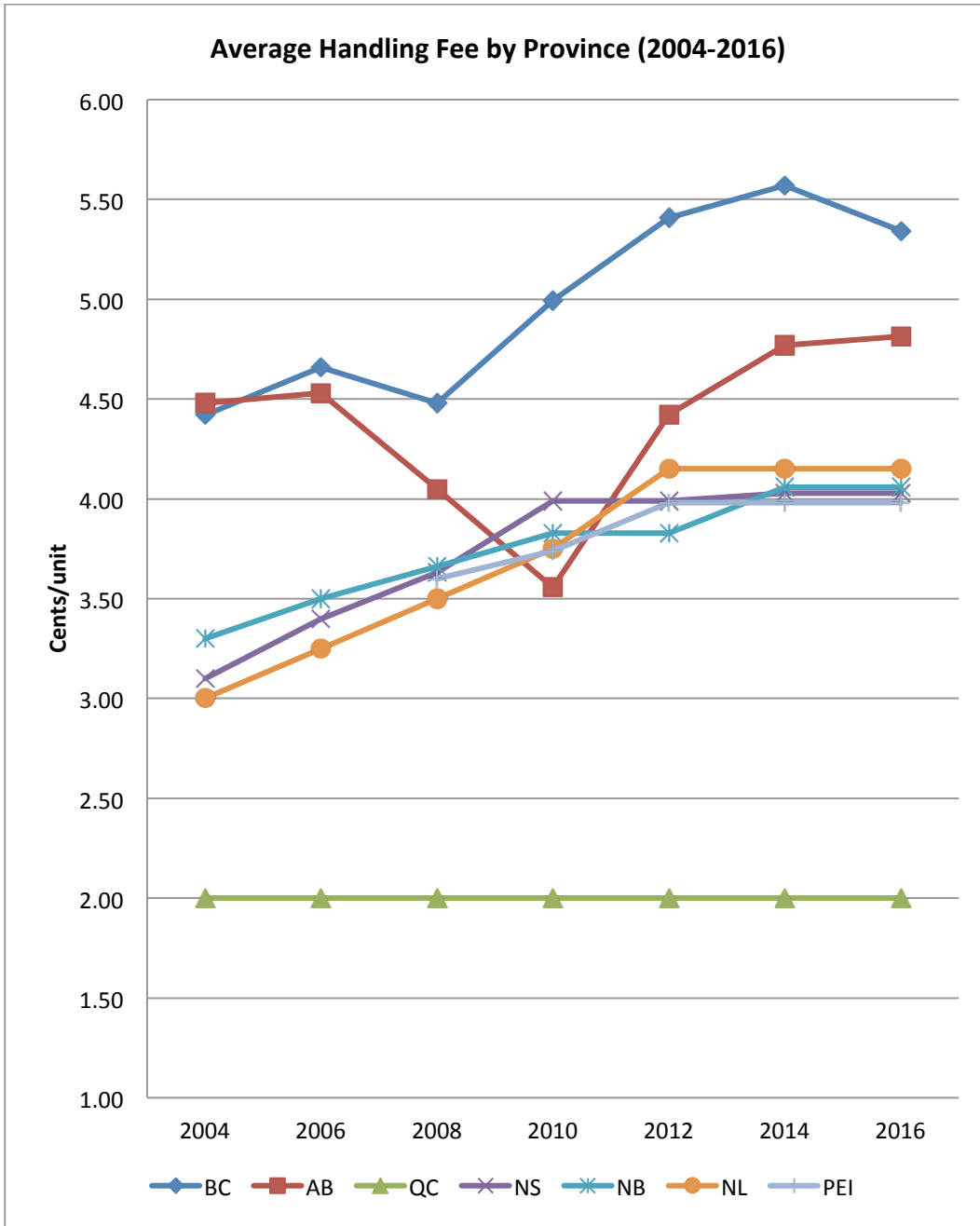


Figure 32 Average Handling Fee by Province (Per Unit) (2004-2016)

Beverage Container Packaging Fees

As of 2017, five Canadian provinces (B.C., Saskatchewan, Manitoba, Ontario, and Quebec) have passed mandatory EPR legislation that obligates the packaging industry to take back the packaging they place on the market. This legislation shifts the responsibility for financing packaging reuse, recycling, or recovery to the packaging industry and away from municipalities and taxpayers. Table 10 presents the percentage of funding of net costs that producers pay into each program. The legislation in B.C. and Saskatchewan does not cover beverage containers so the numbers for those provinces are not included here.

Table 10 Percentage of Net Costs Paid by Industry in Canada's PPP Programs

	Manitoba	Ontario	Quebec
Industry Share of Net Costs (%)	80%	50%*	100%
*Note: On August 14, 2017, Ontario's Minister of Environment and Climate Change issued a letter directing Stewardship Ontario and the RRPA to prepare an amended Blue Box Program Plan (BBPP) by February 15, 2018. The amended plan will increase the obligation for brand owners and importers from 50% to 100%. Although details of when the shift to full producer responsibility for recycling costs have not been announced, it is likely to occur beginning in 2019.			

In each province with a legislated EPR program, the responsible agency (i.e. MMSM, Stewardship Ontario, and ÉEQ) collects fees from "stewards" (first importers, manufacturers, or brand owners) based on the amount of packaging their products contribute to the province's waste and recycling stream. Specific packaging or stewardship fees vary from one provincial program to another, and also by material type. Lower performing materials tend to have a proportionally higher share of the costs. As Table 11 shows, the fees can vary widely even within the same material category.

Table 11 Packaging and Printed Paper Stewardship Fees (cents/kilogram) (2018)

Package Type	Manitoba⁷⁸	Ontario⁷⁹	Quebec⁸⁰
Aluminum	-42.86	3.33	16.866
PET	36.05	15.97	27.441
HDPE	26.08	11.89	10.719
Other Plastics	49.89	33.01	27.757
Glass (clear)	6.10	3.77	16.832
Glass (coloured)	6.10	6.16	16.836
Steel / Bi-metal	14.87	6.50	16.891
Aseptic cartons	63.19	22.92	22.375
Gable top	63.19	22.92	18.744

The province of Québec requires 100% of eligible net costs to be paid by producers (although it is the municipalities that operate the system). This program began with 50% industry contributions in 2009, and increased to 80% in 2011, 90% in 2012, and finally 100% in 2013. Éco-Entreprises Québec's (ÉEQ) fee rates are developed using an Activity-Based Costing model and are based on the quantity and type of materials generated.⁸¹ The fee structure also takes into account environmental criteria. In 2017, 3,400 contributing companies provided nearly \$150 million annually to finance the program, including the optimization activities carried out by ÉEQ.⁸² (Note: There is another contribution for printed-paper, which is "in-kind" and therefore not reported as a financial contribution.)

In Ontario, the funding model to date, under the now repealed *Waste Diversion Act, 2002*, (WDA) resulted in a 50/50 split of the total municipal program net costs. Under the new legislative framework, the implementation of which is still a provincial work in progress as the Ministry of Environment and Climate Change (MOECC) develops the enabling regulations, a greater (up to 100%) allocation of costs will be borne by producers.

In Manitoba, the net cost of municipal recycling programs is funded 80% by industry. Manitoba's funding model is different to other PPP programs in that it collects a 2-cent CRF from most nonalcoholic beverage distributors, in addition to and separate from regular PPP fees. These fees, which are typically passed down

the recycling chain to consumers, are used to help finance 80% of MMSM’s beverage related obligation, in addition to buying recycling bins and promoting the AfH recycling program.

In most Canadian PPP programs, packaging fees are levied on almost all types of containers. One exception is aluminum beverage cans in Québec, most of which are subject to deposits and therefore exempt from the municipal funding program. Only the aluminum used in non-beverage packaging such as tins of cat food, canned fish, foil, and pie plates, is subject to packaging fees. Consequently, aluminum in Québec carries a higher fee than it does in Ontario and Manitoba. Because steward fees depend on material type and weight, per container fees can be calculated when the weight of each unit is known. Table 12 shows 2018 fee rates for various types and sizes of containers that are more commonly found on store shelves.

Table 12 Expression of Fees by Beverage Container Type for Select Containers (cents/unit sold) (2018)

Package Type		Weight (g)	MB	ON	QC
<i>Gable top</i>	<i>2-L</i>	<i>63</i>	<i>3.98</i>	<i>1.44</i>	<i>1.18</i>
<i>Gable top</i>	<i>1-L</i>	<i>41</i>	<i>2.59</i>	<i>0.94</i>	<i>0.77</i>
<i>Gable top</i>	<i>Small</i>	<i>14</i>	<i>0.88</i>	<i>0.32</i>	<i>0.26</i>
<i>Aseptic cartons</i>	<i>Small</i>	<i>10.6</i>	<i>0.67</i>	<i>0.24</i>	<i>0.24</i>
<i>Bi-metal</i>	<i>Small</i>	<i>46.7</i>	<i>0.69</i>	<i>0.30</i>	<i>0.79</i>
<i>Glass</i>	<i>473ml clear bottle</i>	<i>228</i>	<i>1.39</i>	<i>0.86</i>	<i>3.84</i>
<i>Glass</i>	<i>>1-L clear liquor</i>	<i>737.2</i>	<i>4.50</i>	<i>2.78</i>	<i>12.41</i>
<i>Plastic</i>	<i>2-L PET bottle</i>	<i>58</i>	<i>2.09</i>	<i>0.93</i>	<i>1.59</i>
<i>Plastic</i>	<i>Outer milk bag – LDPE film</i>	<i>8</i>	<i>0.40</i>	<i>0.26</i>	<i>0.22</i>
<i>Aluminum</i>	<i>355ml can</i>	<i>14</i>	<i>-0.60</i>	<i>0.05</i>	<i>0.24</i>
<i>Italicized materials are based on Stewardship Ontario Blue Box Program Plan 2003.</i>					
<i>Non-italicized materials are based on Encorp data.</i>					

Overview of System Costs and Revenues

To determine the costs of the various beverage container recycling programs in Canada, CM Consulting relies on data found in financial reports prepared by the agencies and organizations responsible for managing those systems. Typical program costs include collection, transportation, and processing costs, as well as expenses relating to administration and promotion and education. Revenues generally come from a combination of sources, including commodity sales, unredeemed container deposits, and consumer fees.

Factors Impacting Program Costs

Many factors can affect program costs, such as the collection rate, convenience level (i.e. collection frequency, number of depots, etc.), program scope, and population density. No program in Canada operates within the same parameters, which is why the costs of provincial programs should not be directly compared.

To illustrate this point, consider the provinces of Manitoba, Ontario, and Quebec. While each of these programs may be less expensive to operate than DRSs, they are also less effective and collect fewer containers per capita. Ontario and Quebec are also two of the most populated provinces, which means they can benefit from economies of scale. What is unknown in all three of these provinces is the cost of the away-from-home (AfH) collection programs, which are likely significant. These costs need to be considered in any comparison of

financial performance, as well as the incremental costs that would be incurred to achieve higher collection and recycling rates.

Another factor that can impact the financial performance of a program is the amount of revenue generated from material sales. Material sales revenue, which plays an important role in helping to offset the gross costs of the program, will vary depending on the current market value of the materials collected, as well as on the types of containers collected and their respective collection rates. This, in turn, is influenced by the deposit level and the types of containers that are subject to deposit.

In Alberta, where the DRS covers all material container types (excluding those for domestic beer), sales revenues covered 24% of total program costs. In Ontario, where only wine, spirits, and beer containers are included under deposit-return, the amount of revenue generated from material sales as a percentage of total system costs is lower. This is attributable to the fact that over 95% of material collected is glass bottles, which are worth significantly less than the materials that typical DRSs manage. Conversely, Québec's DRS for non-refillable containers manages mostly PET and aluminum cans (which have a higher re-sale value), with only a minor amount of material coming from the non-refillable glass bottles used for beer or for non-carbonated juices.

The Role of Surplus

As discussed in the financing section of this report, some provincial programs (e.g. Saskatchewan, Nova Scotia, New Brunswick, Newfoundland and Labrador, Northwest Territories) charge consumer fees on beverage containers as a means of generating additional revenue. Although part of this revenue may be used to offset program costs, it is sometimes used to subsidize other provincial programs or contribute to a province's general revenues. Table 13 shows how excess funds are used in each provincial program where information is available.

Table 13 Where Do Surplus Funds Go in Each Program?

Province / Territory	How Surplus Funds Are Used
BC	Surplus revenues generated from the CRFs are used to offset the following year's recycling costs. Surplus funds do not subsidize other programs and are adjusted regularly to reflect actual program shortfalls.
AB	Surplus revenues generated from the CRFs are used to offset the following year's recycling costs. Surplus funds do not subsidize other programs and are adjusted regularly to reflect actual program shortfalls.
SK	Surplus is placed in provincial general revenues and helps fund extended recycling programs
NB	Some of the half-back revenue is placed in the Environmental Trust Fund, which is used to promote recycling activities and other initiatives aimed at improving the state of the environment
NS	Some of the half-back revenue is distributed to municipalities to help offset the cost of their waste diversion initiatives
PEI	All excess funds accrue to the provincial treasury
NL	Surplus funds are invested in the Waste Management Trust Fund, which is used to advance sustainable waste management in the province.
NT	Funds generated by the program are placed in the Environment Fund, a special purpose fund that can only be used for waste reduction and recovery purposes. Any surplus revenue in the fund is used to help create new waste reduction and recovery programs. This fund is separate from the government's general account.
YT	Funds generated by the recycling fund fee (RFF) are placed into the Recycling Fund, an account separate from general government revenues that is used to support all recycling activities in Yukon, including community recycling depots, the Recycling Club, transportation of recyclables, etc.

Who Bears the Share?

In early editions of *Who Pays What*[™], we presented data on the costs associated with beverage container recycling in a way that enabled comparisons to be made on a program-to-program basis. However, as explained earlier, this approach is not the most suitable for comparing the efficiency and effectiveness of different programs since system costs (and revenues) can be affected by a myriad of program-specific factors, which makes meaningful comparison impossible.

In recognition of this issue, in 2010 CM Consulting developed a new approach called “Who Bears the Share,” that allows for a better understanding of how system costs are shared among the different players in each province. By identifying the share (percentage) of program costs that each stakeholder group is responsible for, this approach is intended to offer insight into the equity or fairness of the various funding models.

The “share” is calculated by taking the stakeholder’s contribution and dividing that by the total amount of program funding (excluding material revenues). The formula is as follows:

$$\text{Stakeholder Contribution (\$)} / \text{Total Program Funding (\$)} \text{ (excluding material revenues)}$$

Figure 33 shows the results of the *Who Bears the Share* analysis for 2016.

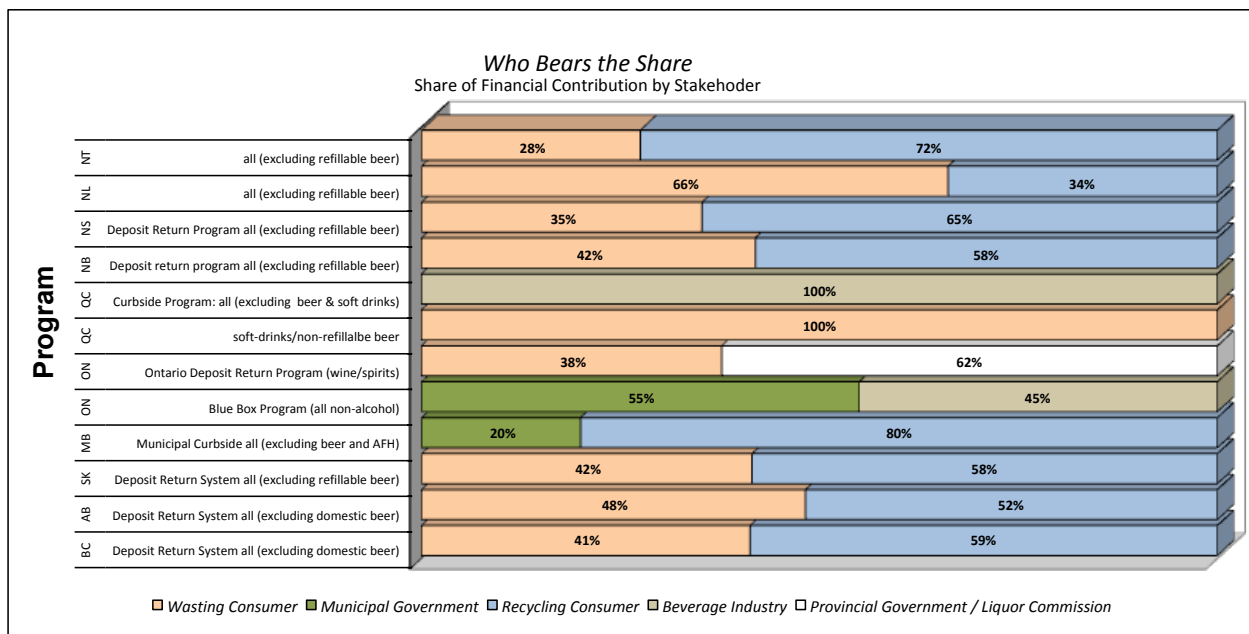


Figure 33 Share of Financial Contribution by Stakeholder by Province

Summary of Analysis

The *Who Bears the Share* analysis confirms that only in Québec and Ontario does industry pay for some portion of the costs of collecting and recycling beverage containers (note: these contributions are mandated

through provincial EPR laws). In most other provinces, it is the consumer that is stuck paying for some or all of the system costs.

The consumer can be divided into two groups: the “wasting consumer” and the “recycling consumer.” The wasting consumer is the person who chooses not to redeem the container; this group pays through unredeemed deposits. The recycling consumer is the person who returns the container for recycling; this group pays through non-refundable consumer fees and halfback deposits in provinces where they are charged (BC, Alberta, Saskatchewan, and the Atlantic provinces). The wasting consumer will also pay the up front consumer fee.

The analysis shows that only in two provinces (Quebec and Newfoundland) do wasting consumers pay more than recycling consumers. Since 2013, Québec consumers who choose not to return their empty beverage containers bear 100% of the costs of the DRS. In Alberta, wasting consumers bear approximately 48% of net program costs, leaving recycling consumers with the remaining 52% (see Figure 34). This is because of Alberta’s relatively high deposit levels, which translate into more revenue from unredeemed deposits. In B.C., with lower deposits, recycling consumers pay a larger share of program costs (see Figure 35). In Newfoundland and Labrador, the lower recovery rate combined with the relatively high refund (in relation to the non-refundable portion) means there is a greater pool of unredeemed funds.

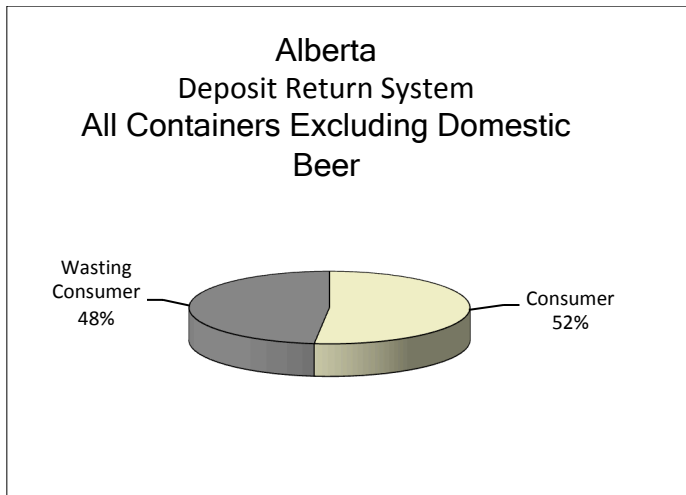


Figure 34 Percentage of Program Costs Paid by Wasting vs. Recycling Consumer, Alberta (2016)

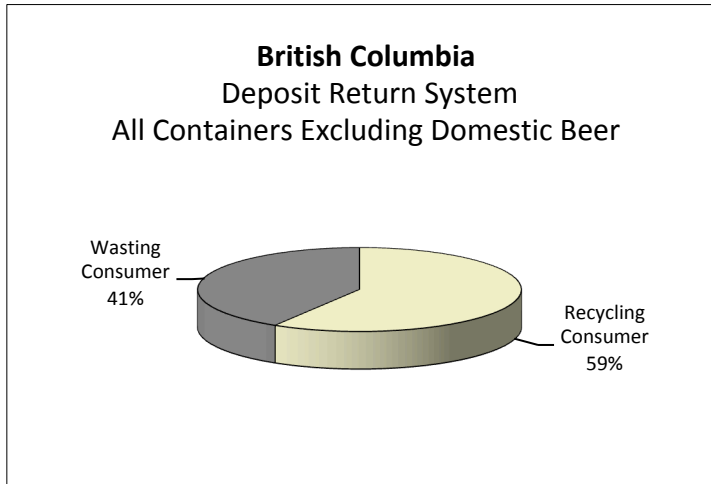


Figure 35 Percentage of Program Costs Paid by Wasting vs. Recycling Consumer, British Columbia (2016)

In Ontario's deposit system for alcohol beverage containers, the recycling consumer pays nothing because the deposit is 100% refundable. In contrast, the wasting consumer pays 36% of program costs. The Liquor Control Board of Ontario (LCBO) covers the rest.

In Manitoba, Ontario and Québec, the producers or first importers of all non-deposit beverages are required to pay levies on all of their packaging sold into the residential stream. In British Columbia and Saskatchewan, this requirement applies only to milk. In Manitoba, 80% of program costs are covered by industry through the 2-cent per unit levy applied to beverage purchases. In Ontario, the former *Waste Diversion Act* mandated that industry reimburse municipalities 50% of the costs of the curbside recycling program; this is likely to increase to 100% under the new legislation. In Québec, beverage producers (except those for non-refillable soft-drinks and beer) are legally obligated to finance 100% of the net costs to collect, transport, and process the materials, plus 8.55% of that amount to cover administrative costs (e.g. overhead, P&E, etc.).

Who Pays What?

Stakeholders

There are five major stakeholder groups that fund beverage container recycling in Canada. Understanding the role each one plays, from the point at which a container is distributed and sold to the point at which it is consumed and recycled, is critical to informing effective policy development. To this end, this section provides an analysis of the various stakeholders involved and what their roles and responsibilities are when it comes to program financing. Also discussed are some of the key factors that impact each group's relative contribution to total program costs, as well as observations on the fairness of the funding scheme.

The Recycling Consumer and the Wasting Consumer

As mentioned earlier, the recycling consumer is the consumer who returns empty containers to an authorized redemption center or places them in a designated recycling bin (at home or AfH). Regardless of whether containers are recycled via a DRS or curbside program, the recycling consumer has to pay a per unit

consumer fee (i.e. CRFs, EHCs, half-back deposit) on the purchase of all applicable beverage containers. These fees, which are passed down by the beverage industry, are non-refundable and are used to offset system costs.

Total Consumer Fees Paid Out (\$) / Total Number of Containers Sold

The wasting consumer is the consumer who chooses not to recycle their containers. By forfeiting their deposits, the wasting consumer bears the direct costs of his actions. The “cost of wasting” is determined by the following calculation:

$$\frac{\text{Total Unredeemed Deposits (\$) + Non-Returnable Fee on Unredeemed Units /}}{\text{Total Number of Unredeemed Containers}}$$

The percentage of program costs borne by the wasting consumer varies by province and depends on a number of factors, including the deposit value and whether beverage containers are subject to any upfront, non-refundable container fees. The higher the deposit, the more expense it is for the wasting consumer, and therefore the higher share they will pay of total program costs. Wasting consumers will also pay more in provinces where there is an up-front fee, like in British Columbia, Alberta, and Saskatchewan.

Table 14 shows the average cost per container borne by the recycling and wasting consumer by province.

Table 14 Expression of Fees by Beverage Container Type for Select Containers (Cents/Unit Sold) (2016)

Province / Territory	Program	Recycling Consumer (Cents/Unit Sold)	Wasting Consumer (Cents/Unit Sold)
BC	wine /spirits / non-alcohol	3.5	9.7
AB	all (excluding domestic beer)	2.4	13.5
SK	all (excluding refillable beer)	5.3	17.3
MB	all (excluding beer)	2	2.0
ON	all non-alcohol	0	0
ON	wine/spirits (mostly glass)	0	14.1
QC	soft-drinks/non-refillable beer	0	5.8
QC	all (excluding beer & soft drinks)	0	0
NB	all (excluding refillable beer)	5.9	10.7
NS	all (excluding refillable beer)	4.9	11.3
NL	all (excluding refillable beer)	3.0	8.0
NT	all (excluding refillable beer)	5.3	10.3

Municipal Government

In Canada, the responsibility for collecting, diverting, and disposing waste falls on municipal governments, as does the responsibility for litter collection. Unless the municipality adopts a user-pay system or an EPR program is in place, much of the costs of providing these services (including collecting beverage containers for recycling) are borne directly by municipal taxpayers. Besides removing a powerful incentive to reduce waste and increase recycling, this approach to paying for residential waste management gives consumers the impression that recycling/composting is free, which distorts costs and devalues the service. It is also unfair in that it forces households generating small amounts of waste or recyclables to subsidize higher-waste producing households.

In recognition of this problem, a number of provinces have passed EPR legislation to shift some (or all) of the costs for waste management away from municipalities and towards producers. In Saskatchewan, stewards are obligated to pay fees to cover payment for services for qualified municipalities for up to 75% of the net costs of municipal recycling programs, leaving municipalities to cover the remaining 25%. In Manitoba, the portion of costs borne by municipalities is 20%, and in Ontario it is 50% (to be increased to 100% under the new *Waste-Free Ontario Act*). British Columbia and Quebec are currently the only two provinces where municipalities are completely (100%) relieved of the financial burden of recycling and waste management.

Provincial Governments or Liquor Commissions

In most Canadian provinces, the provincial government bears no responsibility for the costs of beverage container recycling. Ontario is the exception. In Ontario, the costs of operating the Ontario Deposit Return Program (ODRP) for wine and spirit containers are split between the province's liquor commission (i.e. the LCBO) and the wasting consumer. Specifically, the LCBO pays 5.1-cents (net) on every unit sold. This amount represents the net cost of recycling after unredeemed deposits are used to offset gross costs.

The Beverage Industry

As previously mentioned, industry is slowly being forced to take on an increasing share of financial responsibility for the end-of-life management of its products and packaging, including beverage containers. The idea behind this is sensible: those who have the greatest ability to influence the lifecycle impacts of the product should have the greatest responsibility for recovering and recycling those same products at end-of-life. In the case of beverage containers, these are the beverage companies.

Currently, there are five provinces in Canada where industry is directly responsible for paying a certain percentage of PPP recycling costs: B.C. (100%), Saskatchewan (75%), Manitoba (80%), Ontario (50%, to be increased to 100%), and Québec (100%). In these provinces, beverage producers or first importers of all non-deposit beverages are required to pay material-specific levies on all their packaging sold into the residential stream (In B.C. and Saskatchewan, this requirement applies only to milk). In Québec, if the deposit system is running a deficit, soft drink producers are required to pay a fee for every container sold into the province.

When it comes to DRSs, the only jurisdiction that requires industry to bear a share (albeit a very small share) of beverage container recovery costs is Quebec. It should be noted, however, that in the last few years the percentage of costs borne by industry has been reduced to zero because revenues from material sales and unredeemed deposits have been sufficient. Unlike other deposit provinces where the bulk of system costs are paid by consumers through fees and unredeemed/non-refundable deposits, in Quebec there is no CRF or half-back deposit system which means that recycling consumers pay nothing.

The Domestic Beer Industry (Refillable Containers)

Canada's domestic beer industry is unique in North America. Set up as a voluntary initiative, its DRS for refillable beer containers is managed collectively by brewers and is based on a return-to-retail collection model. The program, which relies on the existence of industry standard bottles (ISBs), allows brewers to share standard bottles and self-finance their distribution and reverse distribution. Although the brewers receive some of the unredeemed deposits to offset system costs, this revenue is minimal because the return rates are so high.